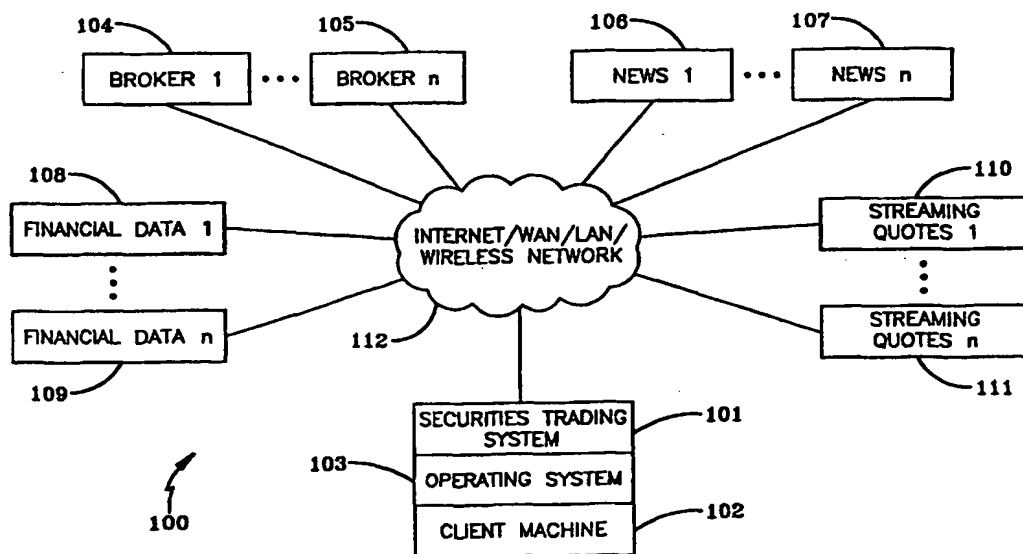




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(54) Title: ELECTRONIC SECURITIES TRADING SYSTEM



(57) Abstract

A computer-implemented system (100) and method having a graphical user interface with multiple windows for electronic securities trading (101) that consolidates information the investor needs for trading. It automatically and continuously retrieves and displays updated information that the investor needs for executing trades in a way that is transparent to the user. The system provides real-time portfolio management and accounting. The software program contains multiple windows for simultaneously allowing display of investor positions, balances, trade status, news (106) and research. Investors can perform investment research, enter orders, obtain real-time quotes (110, 111), view current position, pending orders, cash and margin balances, market data, dynamic charts and online news and reports using multiple windows on one computer screen. The program facilitates automatic management of trading orders and monitoring positions (securities inventory) without the presence of the user.

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ELECTRONIC SECURITIES TRADING SYSTEM

by David H. Disraeli

TECHNICAL FIELD OF THE INVENTION

5 The present invention relates generally to electronically securities trading on the Internet. More particularly, the invention is a computer-implemented system and method of use for Internet securities trading with a windows based display interface that consolidates trading information for the investor. The system and method automatically retrieves, refreshes and displays in real-time or close to real-

10 time updated trading information that the investor needs to be able to execute trades in a way that is transparent to the investor. The information can be simultaneously displayed in multiple windows on one computer screen display. The system and method provides real-time portfolio management and accounting. In an alternate embodiment, the electronic securities trading is accomplished using

15 a wide area network, local area network, wireless network or other type of connection to link the user to one or more servers containing broker trading programs, financial data, news and stock quotes.

BACKGROUND

Information retrieval systems for financial information, such as for the stock

20 market, normally need a high-performance, real-time information retrieval network in which update and retrieval rates for executing orders are very fast. Investors are now primarily using the world-wide-web (Internet) to trade securities, which allows the investor to bypass a live broker to buy and sell stocks, bonds, options or mutual funds. The investor needs only a computer and a connection to the Internet

25 to execute trades. While the Internet may be slower than a direct network

connection to a broker, it is still adequate for most investors who want to execute trades. In order to speed up the process, some systems have focused on improving the execution times of trades on the Internet, that is, the time it takes to place an order to buy or sell securities and have the order recognized and
5 executed. Other systems have focused on improving the speed of obtaining quotes. But besides needing a high performance system for quotes and trade execution, investors also need the most up to date information on current stock positions, balances, and trade options and status. In addition, they need the most current news and research concerning the stocks they are trading. They also need
10 the ability to monitor executed orders and their portfolio positions. There has been little or no focus on improving the investor's information gathering and position monitoring functions in Internet based systems or in systems using a wide area network, local area network, wireless or other type of network connection.

Present browser based trading systems on the Internet do not meet the
15 needs of the investor for high-performance real-time information to be able to trade securities, obtain quotes, do research, monitor executed orders and current positions and balances. One of the reasons is due to the time delays associated with accessing web site information and the need for the investor to access multiple websites and pages to gather relevant information. Other major problems
20 facing investors include that information is not consolidated and is mainly static. It must be retrieved or "refreshed" to determine if new or updated information exists. In addition, portfolio management and accounting is inadequate or in many cases does not exist at all. With regard to the consolidation of information, currently a separate page or site is required for the many different tasks involved in trading.
25 The execution of the trades themselves may be fast, but the investor may have to

go to multiple web sites and multiple web pages within those sites. The number of pages that have to be viewed may be in the order of ten to fifteen to accumulate the information needed to trade. That information includes news related to securities transactions, market news and research, pending orders, portfolios, and cash balances, charts, previous transactions and quotes that are all currently hosted on separate web sites or pages. Once the investor accesses the particular web site or page, he or she must then extract the pertinent information needed. For example, if the investor wants the most up to date news related to a particular stock, the investor has to access one or more web sites that may contain such news information, search the site to determine if there is any relevant information and extract the news by either reading it on-line or printing it. While doing this, the investor is reading old information as well as new. During the time that the investor is searching for pertinent information, the investor is not able to execute or monitor trading transactions.

Related to the lack of consolidation of information and the need for separate websites and web pages to gather investor trading information is that much information on the web is usually static in nature. The static nature of the Internet means that information is often updated only when the investor requests an update or refreshes the browser window. Although certain web sites have automatically refreshing websites, for example stock prices are often updated automatically, many other web pages that hold information needed by the investor to trade are not. Therefore, delays occur because most web-based trading systems require the user to ask for the initial information and then periodically request updates to determine if there is a change in the information. Time is wasted because the only way to know if information has changed is to request an update. The information is

then retrieved, regardless of whether there is any change in the information. For example, if the investor wants to determine if a trade has been executed, the investor must go to a pending orders page and then search the pending orders for execution status. Still another operation is needed to access the time of execution
5 and the completed price. Once the refreshed page is displayed, the user must then periodically and continually request updates and then spends time reading the page to determine any change in status.

In addition to information being static and not consolidated, Internet brokers do not calculate profit and loss on positions in real-time. Normally, an update of
10 total market position occurs at the end of each trading day, as opposed to when each trade is completed. Investors must calculate their own profits and losses on positions manually or by using a separate computer program and display. Even at the end of the trading day when their market positions have been updated, investors must still keep track of their accounting separately, in part, because the
15 brokerage firm does provide the cost basis of each transaction.

SUMMARY

The present invention is an electronic securities trading system and method of use that solves the problems of lack of consolidation of trading information (particularly trading information on the Internet), the static nature of trading data,
20 the need for retrieval and refresh to determine if there is new or updated information, and the lack of real-time portfolio management and accounting. For Internet trading, since the present invention uses a windows based graphical user interface for communication with the user instead of a browser, it overcomes the problems with browser based trading systems such as lack of real-time information

to be able to trade securities, obtain quotes, do research, monitor executed orders and current positions and balances.

The present invention is a computer-implemented system and method with a windows based display for securities trading that consolidates information the investor needs for trading. It automatically and continuously retrieves and displays updated information that the investor needs to be able to execute trades in a way that is transparent to the user. The system and method also provides real-time portfolio management and accounting. The program is a windows-based computer software program containing multiple windows that simultaneously allows for the display of investor positions, balances, trade status and news and research. Investors can perform investment research, enter orders, obtain real-time quotes, view current position, pending orders, cash and margin balances, market data, dynamic charts and online news and reports using multiple windows displayed on one computer screen display. The program also provides for automatic management of trading orders and monitoring of positions without requiring the presence of the user.

The present invention is preferably implemented as a trading computer program running on one or more client computers that communicate with one or more servers hosting broker computer programs, financial data, news data and stock quote data. In one embodiment, the communications network for is the Internet. In other embodiments, the communications network may be a wide area network (WAN), local area network (LAN) or a wireless communication network. The trading computer program in the client computer manages the communication connection. It also manages the data interface (input and output) to the user through a graphical user interface displayed on the user's display terminal. The

user initiates the computer program at the client computer by selecting the program using the graphical user interface. The graphical user interface has multiple windows that can be run on various operating systems and computer platforms. The computer program may also be initiated from a script or web page.

- 5 If the user is not already actively receiving and sending transmissions over its communications network, the program initiates the communications network connection.

The present invention comprises a computer implemented method for electronically trading securities, the method comprising the step of using a trading
10 computer program having a graphical user interface display with multiple windows, allowing a user to place securities orders with a broker computer program while displaying and continuously updating securities trading data on the graphical user interface display. The securities orders may be placed and executed with the broker by means of an Internet connection or by means of a wide area network,
15 local area network or wireless network or other type of network connection. The trading data that is displayed and continuously updated may be obtained by means of an Internet connection or by means of a wide area network, local area network or wireless network or other type of network connection. The securities trading data comprises account information, portfolio information, position information,
20 trade execution status and news related to securities trading.

The trading computer program comprises an event manager that monitors for the occurrence of a user-defined condition and performs a user-defined action in response to the occurrence of the condition. The user-defined action may comprise executing a securities trade order or may include some type of user
25 notification such as sending a page, sending an e-mail or other means of notifying

the user. The trading computer program may reside on a client computer and the broker program may reside on a server computer. The trading computer program may be connected to one or more of the servers by means of an Internet connection, a wide area network, local area network or wireless network

5 connection.

The placing of securities orders comprises interpreting the security order and formatting commands needed to interface with the broker computer program, sending the commands to the broker via a communication means, monitoring security order status and sending any change in the security order status to the

10 display. The displaying and continuously updating securities trading data comprises requesting a securities trading data item from one or more servers, receiving the securities trading data item from one or more servers and comparing the received data item with archived data for that item. The data item may be any type of data needed to update the display or data requested by the user, such as

15 financial information, quotes, trade execution status and market news. If the received data item matches the archived data, the data item is discarded. If the received data item does not match the archived data, the data is archived, displayed to the user and flagged as new on the graphical user interface display. These steps are repeated on a periodic basis until the request for the securities

20 data item is removed.

The securities data item request may be generated by the user or by the trading computer program in response to the occurrence of a user defined condition. The securities data item request may be for news related to securities trading or for the current stock price.

The displaying and continuously updating of securities trading data comprises continuously extracting and updating the securities trading data from a remote data server by connecting over a communications network to a computer hosting the broker computer program and determining data needed for the

5 windows based display, sending a request for the data over the communications network and displaying the received data.

The placing of securities orders by means of the Internet connection comprises entering an order by selecting a stock to be traded and sending a trade order to a broker's Internet server. Communication with the broker's server is

10 established and maintained and the trade order is translated into commands necessary to simulate trading from a broker's order screen. Commands are sent to the broker's server and the status of the trade order is continuously monitored, displayed and updated. The trade order may also be placed for execution with multiple brokers. The account information, portfolio information, position

15 information, trade execution status and news related to securities trading are contained within separate display windows that are capable of being simultaneously displayed and updated on the user's display.

There is a position window for displaying the current portfolio position and automatically and continuously updating the current portfolio position, allowing a

20 user to simultaneously display portfolio positions with multiple brokers within the position window and continuously updating the positions with multiple brokers and allowing the user to add entries to and delete entries from the portfolio positions. The position window may also comprise allowing the investor to place securities orders over the Internet by selecting one or more stocks listed in the position

25 window and allowing the investor to activate a news search for a stock listed in the

position window by selecting the stock in the position window. The user is notified of a change in stock value for a stock entry listed in the position window. The notification may take the form of changing the color of the stock entry listed on the display. In addition, the user is notified via the position window if new or updated
5 news information concerning a stock has been received by displaying an indicator next to a stock listed in the position window. Portfolio positions with each separate broker may be visually distinguished by color coding the display.

A balance window displays the current portfolio balances for assets, equity, liabilities, margin information and current cash, allows the user to simultaneously
10 display balances with multiple brokers within the balance window and balances from multiple brokers are continuously updated. The user can place securities orders over the Internet by selecting a stock listed in the balance window. The balances may be visually distinguished for each broker by color coding the display.

A trade window allows the investor to place an order to buy and sell stock,
15 generates and displays historical data concerning stock bought and sold. Order status is displayed and automatically update and all orders are logged. The user may place orders with multiple brokers. The trades may be visually distinguished for each broker by color coding the display. The user may place special orders for automatic execution in the trade window. The special order may comprise one of
20 the following: simultaneously specifying primary and secondary instructions for the execution of an order whereby the secondary instruction are executed only after execution of the primary instructions; standing instructions to liquidate a position when a certain profit level has been reached; specifying an order held for execution until after a certain period of time has elapsed; entering buy and sell
25 instructions simultaneously for one stock; specifying execution of the order when

investor generated criteria is met; permitting the simultaneous entry of multiple orders through one or more brokers; selling an entire portfolio with one command and buying and selling a preset list of stocks with one command.

A continuous network connection may be established between the display
5 and a broker. The user may export data for use with a separate computer application program. The separate computer application program may be a financial management application program, tax application program or spreadsheet application program.

A user interface display comprises allowing the user to view add modify and
10 delete account records, allowing the user to buy, sell and enter special orders for one or more stocks, allowing the user to generate requests for news data items for one or more stocks, allowing the user to view, modify and delete stock portfolios allowing the user to specify monitoring for the occurrence of a condition and allowing the user to specify an action to be taken by the trading securities program
15 if the condition occurs and allowing the user to select data to export to a separate computer application program.

The present invention is computer executable software code stored on a computer readable medium, the code for a computer implemented method for trading securities over the Internet, comprising code for allowing an investor using
20 a computer with a display having a graphical user interface with multiple windows to place securities orders over the Internet or other connection while simultaneously displaying and continuously updating securities trading information on the same display.

The present invention also comprises a computer-readable medium having
25 computer-executable software code stored thereon, the code for a computer

implemented method for electronically trading securities over the Internet comprising code for allowing a user using a computer with a display having a graphical user interface with multiple windows to place securities orders over the Internet while displaying and continuously updating securities trading information

5 on the same display, wherein the securities trading information comprises security position, balance, trade execution status and news related to securities trading, the securities trading information displayed comprises continuously extracting and updating the securities trading information from Internet websites.

The present invention comprises a computer system for electronically trading securities having at least one client computer-based machine with a securities trading component running on at least one of the client computer-based machines for allowing a user using a graphical user interface display with multiple windows to place securities orders by sending the securities orders via a communication means to a broker component running on at least at least one

10 server computer-based machine. The securities trading component displays and continuously updates securities trading information collocated on the display by sending requests and receiving data via the communication means from at least one server computer-based machine. The communication means may be an

15 Internet connection or a wide area network, local area network or wireless network.

20 BRIEF DESCRIPTION OF THE DRAWINGS

These and other features, aspects and advantages of the present invention will become better understood with regard to the following description, appended claims and accompanying drawings where:

Fig. 1 shows a system diagram of the securities trading system.

Fig. 2 shows a system block diagram of the securities trading system software application.

Fig. 3 shows a system block diagram of an alternate embodiment of the securities trading system software application

5 Fig. 4 shows a block diagram of the user display interface of the securities trading system.

Fig. 5 shows a block diagram of the trades user display interface.

Fig. 6 shows a block diagram of the accounts user display interface.

Fig. 7 shows a block diagram of the research user display interface.

10 Fig. 8 shows a block diagram of the event manager user display interface.

Fig. 9 shows a block diagram of the portfolio user display interface.

Fig. 10 shows a block diagram of the data storage function of the securities trading system.

Fig. 11 shows a block diagram of the network manager.

15 Fig. 12 shows a block diagram of the trade manager.

Fig. 13 shows a block diagram of the event manager.

Fig. 14 shows a flowchart of events processing.

Fig. 15 shows a block diagram of the Dynamic Pull™ function for retrieving data through an Internet connection.

20 Fig. 16 shows a block diagram of the Dynamic Pull™ function for retrieving data through a WAN, LAN, wireless or other type of communication connection.

Fig. 17 shows a flowchart of the Dynamic Pull™ processing.

Fig. 18 shows an exemplary version of the main display of the securities trading system.

Fig. 19 shows an exemplary display of the balances window simultaneously displayed along with the positions and connection status windows.

Fig. 20 shows an exemplary display of simultaneously displaying balances with multiple brokers within one balance window.

5 Fig. 21 shows an exemplary display of displaying balances with multiple brokers in separate broker balance windows.

Fig. 22 shows an exemplary version of the position display window.

Fig. 23 shows a block diagram of the position function.

Fig. 24 shows a block diagram of the trade function.

10 Fig. 25 shows an exemplary version of the order entry display.

Fig. 26 shows a flowchart of the trade execution function.

DETAILED DESCRIPTION OF THE DRAWINGS

Fig. 1 shows a system diagram of the securities trading system 100. The securities trading system 100 runs as an application 101 on a client's machine 102
15 under the client machine's operating system 103. The securities trading system application 101 sends data to and receives data from servers hosting multiple securities brokers 104 and 105, news information 106 and 107, financial data research centers 108 and 109 and online streaming trading quote systems 110 and 111 in a way that is automated and transparent to the user. The connection to
20 these servers 104-111 can be via, but is not limited to, the Internet, a Wide Area Network (WAN), a Local Area Network (LAN) or a wireless network 112. The securities trading system application 101 handles the sending and receipt of information between the servers 104-111 in such a way that the user does not have to know or remember the address of any of the servers they wish to gather
25 data from. The securities trading system application 101 resides on the client

machine 102 and can be launched manually by the user (for example by a user clicking a specific button/link of a web page) or automatically via a script.

Fig. 2 shows a system block diagram of the securities trading system software application 125. A core engine 126 controls the action of the entire securities trading application 125. A user interacts with the core engine via the user interface 127. The user interface 127 transmits the user's commands and settings to the core engine 126 where the commands are executed. The core engine 126 accesses stored data from data storage 128. Automated events are controlled by the core engine 126 through an event manager 129. All requests for data are sent to the Dynamic Pull TM component 130, which in turn determines what specific requests should be sent to a network manager 131. The network manager 131 sends and receives the data to and from the appropriate servers (such as multiple securities brokers 104-105, news organizations 106-107, financial data research centers 108-109 and online streaming trading quote systems 110-111 as shown in Fig. 1). As shown in Fig. 2, the information can be hosted on websites accessed via an Internet connection 134. The trade manager 133 determines the exact nature and format of the requests to communicate with each broker 104-105. The report generator 135 accesses data from data storage 128 and develops reports related to accounts, positions, portfolios and performance that are viewable by the user via the user interface 127. The export function 136 allows the user to export data in data storage 128 in another file format for use with a separate application (i.e. a financial management application program, tax application program or a spreadsheet application program).

Fig. 3 shows a system block diagram of an alternate embodiment of the securities trading system software application 150. A core engine 126 controls the

action of the entire securities trading application 125. A user interacts with the core engine via the user interface 127. The user interface 127 transmits the user's commands and settings to the core engine 126 where the commands are executed. The core engine 126 accesses stored data from data storage 128.

5 Automated events are controlled by the core engine 126 through an event manager 129. All requests for data are sent to the Dynamic Pull TM component 130, which in turn determines what specific requests should be sent to a network manager 131. The network manager 131 sends and receives the data to and from the appropriate servers (such as multiple securities brokers 104-105, news

10 organizations 106-107, financial data research centers 108-109 and online streaming trading quote systems 110-111 as shown in Fig. 1). As shown in Fig. 3, the information can be hosted on servers accessed via a Wide Area Network (WAN), Local Area Network (LAN), wireless or other type of server to network connection 151. The trade manager 133 determines the exact nature and

15 format of the requests to communicate with each broker 104-105. The report generator 135 accesses data from data storage 128 and develops reports related to accounts, positions, portfolios and performance that are viewable by the user via the user interface 127. The export function 136 allows the user to export data in data storage 128 in another file format for use with a separate application (i.e. a

20 financial management application program, tax application program or a spreadsheet application program).

Fig. 4 is a block diagram of the user display interface 160 of the securities trading system. The user display interface 160 allows the user to interact with the securities trading system application. From the main window 161, the user can

25 perform multiple tasks. The user can view, add, modify and delete account

records 162. The user can perform stock trades 163 such as buying, selling or entering special orders on stocks and stock options. The user can research 164 a specific stock by viewing news, reports and charts. The user can create, modify, delete and view stock portfolios 165. The user can also interact with the event manager 166 by viewing, adding or deleting a watch 167 or event 168. A watch 167 is defined as a set of user specified conditions that are constantly monitored by the event manager 166. When the specified conditions occur (meaning that the condition is true), the event manager 166 executes the corresponding event 168 that was previously defined by the user. For example, a user may initiate a watch for IBM stock at a price of 110 dollars a share when the stock hits a trading volume of 20 million shares. The user may also specify that when the watch conditions occur (are true) that the securities trading system application buys IBM stock. The event manager 166 constantly monitors for this set of conditions and if it occurs, the event 168 of buying the IBM stock is executed. Watches 167 can be set on multiple variables and can trigger multiple events 168. Certain events 168 and watches 167 are standard with the application, but new ones can be created by the user, thus allowing the user flexibility in controlling the securities trading application.

Fig. 5 shows a block diagram of the trades user display interface 175.

Within the trade user display interface 175, the user can buy 176, sell 177, place special orders 178 and view order status 179. Fig. 6 shows a block diagram of the accounts user display interface 185. Within the accounts user display interface 185, the user can add 186, delete 187, view 188 and modify 189 account information. Fig. 7 shows a block diagram of the research user display interface 195. Within the research user display interface 195, the user can request news

196, reports 197, access web site information 198 and display charts 199. Fig. 8 shows a block diagram of the event manager user display interface 205. Within the event manager display interface 205, the user can view events 206, add events 207, select events 208, delete a watch 209, add a watch 210 and view a watch 211. Fig. 9 shows a block diagram of the portfolio user display interface 215. Within the portfolio user display interface 215, the user can create a portfolio or set of portfolios 216, modify a portfolio or set of portfolios 217, delete a portfolio or set of portfolios 218 and view a portfolio or set of portfolios 219.

Fig. 10 shows a block diagram of the data storage function 225 of the securities trading system. The data storage function 225 is responsible for maintaining the static data during and between user sessions. Included are account records 226, portfolio information 227, position data 228, order and trade status 229, watches 230, events 231 and event logs 232. Account record 226 information may include name, broker identifier, account number, user identifier, position balance, cash balance, purchasing power, margin balance, holdings (list of positions), and orders (list of orders). Portfolio information 227 may include the portfolio name, value and list of positions. Position data 228 may include stock name, quantity, date purchased, purchase price, cost basis, commission paid, current price, dollar amount of any gain or loss, percentage amount of any gain or loss, valid account number and any watch in place for that stock. The watch may be expressed as a specific price and or volume requirements for a stock. The order and trade status 229 may include the stock name, quantity, type, limit price date and time placed, status and a valid account number. The watch 230 may include the details of a watch initiated by the user including the stock name, watch price and volume, other user defined variables and the event to be executed if the

conditions of the watch are met. The events 231 information may include the stock name, action to be taken, email addresses of the and pager phone numbers (in case the watch specified notification of the user as part of the event to occur) along with user defined variables from the watch initiated by the user. All events are

5 logged in an event log 232, which includes event information, and a time stamp of when the event occurred.

Fig. 11 shows a block diagram of the network manager 240. The network manager 240 receives specific requests from the Dynamic Pull™ 241 and trade manager 242 functions. These requests are interpreted and turned into actual

10 network requests executed using the appropriate protocol for each server, based on the type of connection the securities trading system application has to that specific server. For example, the protocol may be ftp 243, http 244, socket 245 protocol or other protocols 246 needed to communicate with the server via an Internet connection 247. If the server is not accessed via the Internet but rather via

15 a Wide Area Network (WAN), Local Area Network (LAN), wireless or other type of server connection 248, the network manager 240 interprets and executes the request using the appropriate protocol for each type of server. In either case, the data is then passed back to the Dynamic Pull™ 241 or trade manager 242 functions.

20 Fig. 12 shows a diagram of the trade manager 250. The trade manager 250 receives trading requests from the core engine 251. These requests may be initiated either by a user action or an automated event. Each trade is immediately sent to the parser 252 where it is passed to the correct broker interface 253-254 function. The broker interface 253-254 function sends network requests specific to

25 the broker via the network manager 255. Status is sent back from the network

manager to the broker interface 253-254 and eventually back to the core engine 256. The broker interfaces 253-254 are independent. The number of broker interfaces 253-254 that can be supported simultaneously is not limited.

Fig. 13 shows a block diagram of the event manager 260. The event manager 260 allows market conditions to be monitored and provides the user with the ability to configure and execute predetermined trades and events 261 upon the occurrence of user defined events and conditions 262. These trades and events can occur even when the user is away from the computer. This is accomplished by setting watches and events via the user interface. A watch is a set of user defined conditions that when met triggers the appropriate event or set of events. Because of the Dynamic Pull™ technology, data can be updated, watches can be met and events executed without any user input. The event manager 263 monitors the events 264 and stored watches 266 as scheduled by the core engine 265. If a watch condition is met, the event manager 263 parses the events and sends the result to the core engine 265 where the action is then fully executed. There is no perceivable difference to the user between a user-defined event 262 and one initiated through the event manager 263. This allows the entire application to be automated. The watches and events can also be modified to support user-designated fields and conditions. The event manager 263 can also interact with third party software to allow events to be initiated or confirmed via voice recognition 267, paging 268, email 269, Internet 270, wireless 271, telephone 272, WAN, LAN or other types of communication 273.

Fig. 14 shows a flowchart of the processing of events. The core engine 275 sends watches, which are received by the event manager 276. The watches are stored for further processing 277. The core engine 275 also schedules the event

manager by sending a watch check 278. The event manager checks the conditions for the stored watches 279 and if the conditions are true, executes the event 280. If the conditions are not true, the event manager waits 281 until the next watch check is received from the core engine 278.

5 Fig. 15 shows a block diagram of the Dynamic Pull™ function for retrieving data through an Internet connection. The Dynamic Pull™ 285 allows the user to receive the most current information requested automatically and without requiring any user interaction beyond an initial request for information. That information may include requests for updates of account, portfolios, positions, balances, trade,
10 watches and events. This is accomplished by an initial request for current information from the core engine 286. A timer object function 292 controls how often network requests 287 for data from a list of servers 293 are sent out through the network manager 288 to the applicable server or servers (for example, the Internet) 289. When data requested is received from the Internet 289 by the
15 network manager 288, it is compared 290 with archive data 291 for that item. If the data is already archived 291, the data is not passed to the core engine 286 since the user has already seen it. If the data does not appear in the archived data 291, it is immediately passed to the core engine 286 and flagged as new. The core engine 286 then routes the data to the user's display. Fig. 16 is similar to Fig. 15
20 and shows a block diagram of the Dynamic Pull™ function for retrieving data. Instead of being retrieved through an Internet connection, in Fig. 16 data is retrieved through a WAN, LAN, wireless or other type of communication connection 294.

Fig. 17 is a flowchart of the processing of the Dynamic Pull™ function.

25 When a request for data is received from the core engine 300, a timer is reset 301.

The timer status is checked 302 and the appropriate server to which the request will be sent is determined 303. The request is sent to the network manager 304, which routes the request to the appropriate server. The network manager then receives the data and compares it with archived data for that item 306. If the data is new it is sent to the core engine 307 for display to the user. If the data is old, the data is ignored. In either case, processing continues and if it is time to check again for new data 302, the processing continues so long as the data request is active.

Fig. 18 shows an exemplary version of the main display of the securities trading system. The securities trading system has the capability of displaying trading positions 310, balances 311, trade orders and status 312, news and research 313 and the status of the connection signal 314 simultaneously in a multi-window environment on one windows based display. The windows based display has a graphical user interface that allows for the simultaneous display of the investor's trading positions 310, balances 311, trade orders and status 312, the status of the connection signal 314 and news and research 313. Positions, orders and balances can be color coded to designate the associated broker account. New data can be color coded or "flashed" on the screen to attract the user's attention

Fig. 19 shows an exemplary display of the balances window 320 simultaneously displayed along with the position 325 and connection status windows 326. The balance window 320 contains a display of the current portfolio balances. Those balances include assets 321, equity 322, liabilities 323 and margin information 324. The user has the capability of activating the trading option 327, displaying reports 328 and updating positions 329 from the balance window 320.

Fig. 20 shows an exemplary display of the capability of simultaneously displaying balances with multiple brokers within one balance window 330. Fig. 21 shows an exemplary display of an alternate embodiment of displaying balances with multiple brokers in a separate broker balance windows. A window showing the balances for a first broker 335 is displayed simultaneously with a window showing the balances for a second broker 336.

Fig. 22 shows an exemplary version of the position display window 340. The current portfolio position includes the stock symbol 341, number of shares owned 342, original price of the stock 343, the cost of the stock 344, bid price 345, ask price 346, last trade price 347, the change indicating the difference between the current stock price and the purchase price 348, the total change in value 349, the current gain or loss 350 and the current time of the updated data 351. The position window 340 collects information from a broker's web site or server automatically and simultaneously when the user initializes the program and while the program is active. The information is then dynamically updated on the display. Once a trade is made, the trade status is reflected in the position window even though the broker does not update their position information until the end of the trading day. The information collected from the broker is mixed with a real time and/or periodic update of data to provide continuous updating of portfolio values and profit or loss information. The investor has the capability of customizing the columns and headings 341-351 to reflect investor preferences. The changed values 348 and gain/loss 350 may be color coded to alert the investor. For example, one color can show a gain, another a loss, while black may indicate no changes. A news flag 352 next to a stock indicates new or updated news or research has been received by the data management function. Using a pull-down menu 353, the user has the

capability to buy, sell, view news, details, request research from multiple websites or servers and display charts.

Fig. 23 shows a block diagram of the position function 360. The position window shows the current status of a selected portfolio of stocks (called the current portfolio). Within the positions window, the user has the capability of displaying the current portfolio position 361, displaying positions with multiple brokers 362, editing the current portfolio to add or delete entries 363, activating trading 364, activating balances 365 and activating the news and research retrieval 366.

Fig. 24 shows a block diagram of the trade function 375. The trade function 375 has a display order status capability 376. This is shown in Fig. 25, which is an exemplary version of the order status (titled orders for paper) 384 displayed simultaneously with the order ticket 395. The order status 384 shows the status of all orders 385 for a selected stock 386. The number of shares 387, whether it is a buy or sell order 388, the price the order was entered at 389, the last trade (current price) 390, whether it is a limit, stop or stop limit order 391, whether the order is a day trade or good till cancelled 392 and its current status 393.

Turning back to Fig. 24, the display order status also logs all transaction 376. The order entry function 377 includes the capability to place market, limit, stop, stop limit, buy to cover, short sell and in the case of all buy limit orders – whether it is a day order or good till cancelled. Fig. 25 shows an exemplary version of the order entry display 395. The order ticket will indicate an error if it is not completed correctly. For example, if a price is entered into the limit price field 397, the order type 396 will automatically change to a limit order. If a limit order is selected and a price is not entered, the user will be prompted to enter a price.

Turning back to Fig. 24, the trade function 375 contains the capability to display historical data, gains, tax information and reports 378. The trading function has the capability of executing multiple trades 379 and executing trades with multiple brokers 380. The trade function allows for the placing of special orders and automated trading 381. The investor can buy and sell stocks based on pre-set criteria not allowed directly by the brokers. For example, within the trade function investors can concurrently place an order to buy stock if it reaches a specific price level and then place a stop or limit order on it when it reaches that price level. There is no need to wait until the stock position is initiated to enter the secondary instructions. The trade function allows the user to enter instructions to initiate a position and other instructions that are only valid once the position is eventually taken and are ignored if the position is not taken. Another example is if the user put a protective stop on a stop that the user owns (which is not allowed by the exchange) and a limit, and if neither are executed by a certain time, the position is to be liquidated. Still another example is if the user wishes to base trading on a combination of price and volume criteria. These special order features allow automated trading 381 to occur without requiring the investor to be present. The trading function also has a liquidate option that allows the investor to liquidate all positions immediately 382 in one transaction. Another option is the capability of basket trading, where investors may quickly enter and exit multiple positions at the same time to take advantage of a market opportunity that exists for a very short period of time. The special order feature 381 of preset trade baskets allows investors to enter or exit several positions at one time with the push of one button.

Fig. 26 is a flowchart of the trade execution function 400. The user enters a trade order or the system generates a trade order automatically based on the

occurrence of an event. The core engine then sends the trade order to the trade manager 401. The trade manager sends the trade to a parser function that interprets the commands and passes those commands to the correct broker interface 401. The broker interface generates the commands needed to interface
5 with the correct broker server 403. For example, if the broker has a website for executing trades, the broker interface generates the commands needed to simulate trades from that broker's website order screen. The network manager sends the trade and then monitors the trade status and sends the status back to the broker interface 404 which then sends the trade status to the trade manager
10 405. If the trade has been executed, processing continues at step 409. If the trade has not been executed 406 and has not already been retried some number of times either specified by the user or a default number of times specified by the program, the trade is retried and processing continues at step 402. If the trade has been retried the number of times specified by the user or by the program default
15 407, a check is made to determine if a different broker 408 holds the same stock. If not, processing continues at step 410. If a different broker 408 holds the stock, the user is queried to determine if the user wants the program to sell stock held by the different broker 409. If so, processing continues at step 402. If not processing continues at step 410. The trade manager then sends the trade status to the core
20 engine 410, which in turn sends, the status to a user interface for display 411. The trade manager 410 saves and encrypts all trade parameters (such as bid, ask, time, current price, volume and type of order) for proof of authenticity for use by the user in cases of broker arbitration or other proceedings regarding the trade or attempted trade.

Although the present invention has been described in detail with reference to certain preferred embodiments, other embodiments are possible. Therefore, the spirit and scope of the appended claims should not be limited to the description of the preferred embodiments herein.

What is claimed is:

- 1 1. A computer implemented method for electronically trading securities, the
2 method comprising the steps of using a trading computer program with a
3 graphical user interface display having multiple windows, allowing a user to
4 place securities orders with a broker computer program while displaying and
5 continuously updating securities trading data on the graphical user interface
6 display.
- 1 2. The method of claim 1 wherein the securities orders are placed and executed
2 with the broker by means of an Internet connection.
- 1 3. The method of claim 1 wherein the trading data that is displayed and
2 continuously updated is obtained by means of an Internet connection.
- 1 4. The method of claim 1 wherein the securities orders are placed and executed
2 with the broker by means selected from the group consisting of a wide area
3 network, local area network and wireless network.
- 1 5. The method of claim 1 wherein the trading data displayed and continuously
2 updated is obtained by means selected from the group consisting of a wide
3 area network, local area network and wireless network.
- 1 6. The method according to claim 1 wherein the securities trading data comprises
2 account information, portfolio information, position information, trade execution
3 status and news related to securities trading.
- 1 7. The method of claim 6 further comprising in the trading computer program an
2 event manager that monitors for the occurrence of a user defined condition and
3 performs a user defined action in response to the occurrence of the condition.
- 1 8. The method of claim 7 wherein the user defined action comprises executing a
2 securities trade order.

- 1 9. The method of claim 7 wherein the user-defined action comprises notifying the
2 user of the occurrence of the user defined condition.
- 1 10. The method of claim 1 wherein:
2 a. the trading computer program resides on a client computer; and
3 b. the broker program resides on a server computer.
- 1 11. The method of claim 1 wherein the placing of securities orders comprises:
2 a. interpreting the security order and formatting commands needed to interface
3 with the broker computer program;
4 b. sending the commands to the broker via a communication means;
5 c. monitoring security order status; and
6 d. sending any change in the security order status to the display.
- 1 12. The method of claim 1 wherein the displaying and continuously updating
2 securities trading data comprises:
3 a. requesting a securities trading data item from one or more servers;
4 b. receiving the securities trading data item from one or more servers;
5 c. comparing the received data item with archived data for that item;
6 d. if the received data item matches the archived data, discarding the data
7 item; and
8 e. if the received data item does not match the archived data, archiving the
9 data, displaying the data and flagging the data as new on the graphical user
10 interface display.
- 1 13. The method of claim 12 wherein the data item is selected from the group
2 consisting of financial information, quotes, trade execution status and market
3 news.

- 1 14. The method of claim 12 wherein the trading computer program is connected to
2 one or more of the servers by means of an Internet connection.
- 1 15. The method of claim 12 wherein the trading computer program is connected to
2 one or more of the servers by means of a connection selected from the group
3 consisting of a wide area network, local area network and wireless network.
- 1 16. The method of claim 12 further comprising repeating steps a) through e) on a
2 periodic basis until the request for the securities data item is removed.
- 1 17. The method of claim 12 wherein the securities data item request is generated
2 by the user.
- 1 18. The method of claim 12 wherein the securities data item request is generated
2 by the trading computer program in response to the occurrence of a user
3 defined condition.
- 1 19. The method of claim 12 wherein the securities data item request is for news
2 related to securities trading.
- 1 20. The method of claim 12 wherein the securities data item request is for current
2 stock price.
- 1 21. The method of claim 1 comprising:
2 a. determining data items needed to be displayed on the graphical user
3 interface display;
4 b. continuously extracting and updating the data item from Internet websites
5 by searching Internet websites for the data items needed and extracting the
6 data items.
- 1 22. The method of claim 21 further comprising:
2 a. comparing a received data item with archived data for that item;

- 3 b. if the received data item matches the archived data, discarding the data
4 item; and
- 5 c. if the received data item does not match the archived data, archiving the
6 data, displaying the data and flagging the data as new on the graphical user
7 interface display.

1 23. The method of claim 1 wherein the displaying and continuously updating of
2 securities trading data comprises:

- 3 a. continuously extracting and updating the securities trading data from a
4 remote data server by connecting over a communications network to a
5 computer hosting the broker computer program; and
- 6 b. determining data needed for the display, sending a request for the data over
7 the communications network and displaying the received data.

1 24. The method of claim 2 wherein placing securities orders by means of the
2 Internet connection comprises:

- 3 a. entering an order by selecting a stock to be traded and sending a trade
4 order to a broker's Internet website comprising:
- 5 i. establishing and maintaining communication with the broker's website;
6 ii. translating the trade order into commands necessary to simulate trading
7 from a broker's order screen;
- 8 iii. sending the commands to the broker's website; and
- 9 b. continuously monitoring, displaying and updating the status of the trade
10 order.

1 25. The method according to claim 24 further comprising allowing the trade order to
2 be placed for execution with multiple brokers.

1 26. The method of claim 6 wherein the account information, portfolio information,
2 position information, trade execution status and news related to securities
3 trading are contained within separate display windows that are capable of being
4 simultaneously displayed and updated on the user's display.

1 27. The method of claim 26 further comprising a position window for:
2 a. displaying the current portfolio position and automatically and continuously
3 updating the current portfolio position;
4 b. allowing a user to simultaneously display portfolio positions with multiple
5 brokers within the position window and continuously updating the positions
6 with multiple brokers; and
7 c. allowing the user to add entries to and delete entries from the portfolio
8 positions.

1 28. The method of claim 27 wherein the position window comprises:
2 a. allowing the user to place securities orders over the Internet by selecting
3 one or more stocks listed in the position window; and
4 b. allowing the user to activate a news search for a stock listed in the position
5 window by selecting the stock in the position window.

1 29. The method of claim 28 wherein the position window comprises notifying the
2 user of a change in stock value for a stock entry listed in the position window.

1 30. The method of claim 29 wherein the user is notified of a change in stock value
2 for a stock listed in the position window by changing the color of the stock entry
3 listed on the display.

1 31. The method of claim 28 wherein the position window comprises displaying an
2 indicator next to a stock listed in the position window if news information
3 concerning that stock has been received.

- 1 32. The method according to claim 29 further comprising visually distinguishing the
2 portfolio positions for each broker by color coding the display.
- 1 33. The method of claim 26 further comprising a balance window for:
2 a. displaying the current portfolio balances for assets, equity, liabilities, margin
3 information and current cash;
4 b. allowing the user to simultaneously display balances with multiple brokers
5 within the balance window and continuously updating the balances from
6 multiple brokers; and
7 c. allowing the user to place securities orders over the Internet by selecting a
8 stock listed in the balance window.
- 1 34. The method of claim 33 further comprising visually distinguishing the balances
2 for each broker by color coding the display.
- 1 35. The method of claim 26 further comprising a trade window:
2 a. allowing the user to place an order to buy and sell stock;
3 b. generating and displaying historical data concerning stock bought and sold;
4 c. displaying and automatically updating order status;
5 d. logging all orders; and
6 e. allowing the user to place orders with multiple brokers.
- 1 36. The method of claim 35 further comprising visually distinguishing the trades for
2 each broker by color coding the display.
- 1 37. The method of claim 26 further comprising a trade window for allowing the user
2 to place special orders for automatic execution.
- 1 38. The method of claim 37 wherein the special order comprises simultaneously
2 specifying primary and secondary instructions for the execution of an order

3 whereby the secondary instruction are executed only after execution of the
4 primary instructions.

1 39. The method of claim 37 wherein the special order comprises standing
2 instructions to liquidate a position when a certain profit level has been reached.

1 40. The method of claim 37 wherein the special order comprises specifying an
2 order held for execution until after a certain period of time has elapsed.

1 41. The method of claim 37 wherein the special order comprises entering buy and
2 sell instructions simultaneously for one stock.

1 42. The method of claim 37 wherein the special order comprises specifying
2 execution of the order when user generated criteria is met.

1 43. The method of claim 37 wherein the special order comprises permitting the
2 simultaneous entry of multiple orders through one or more brokers.

1 44. The method of claim 37 wherein the special order comprises:

2 a. selling an entire portfolio with one command; and

3 b. buying and selling a preset list of stocks with one command.

1 45. The method of claim 1 further comprising establishing a continuous network
2 connection between the display and a broker.

1 46. The method of claim 1 further comprising allowing the user to export data for
2 use with a separate computer application program.

1 47. The method of claim 46 wherein the separate computer application program is
2 selected from the group consisting of financial management application
3 program, tax application program and spreadsheet application program.

1 48. The method of claim 1 wherein the user interface display comprises:

2 a. allowing the user to view, add, modify and delete account records;

- 3 b. allowing the user to buy, sell and enter special orders for one or more
- 4 stocks;
- 5 c. allowing the user to generate requests for news data items for one or more
- 6 stocks;
- 7 d. allowing the user to view, modify and delete stock portfolios;
- 8 e. allowing the user to specify monitoring for the occurrence of a condition and
- 9 allowing the user to specify an action to be taken by the trading securities
- 10 program if the condition occurs; and
- 11 f. allowing the user to select data to export to a separate computer application
- 12 program.

- 1 49. A computer implemented method for electronically trading securities in a
- 2 computer with a display having a graphical user interface with multiple windows
- 3 comprising:
- 4 a. consolidating trading information into a windows based display with multiple
- 5 windows, the trading information comprising position, balance, trade order,
- 6 trade order status and trade related news and research, the trading
- 7 information being extracted from data obtained by searching Internet
- 8 websites and pages;
- 9 b. allowing the user to simultaneously place trade orders for securities over the
- 10 Internet while the trading information is displayed and continuously updated
- 11 by searching Internet websites and pages; and
- 12 c. wherein the placing of securities orders by the user comprises:
- 13 i. entering the trade order by selecting a stock to be traded and sending a
- 14 trade order to a broker's Internet website comprising:

- 15 1. establishing and maintaining communication with the broker's
16 website;
- 17 2. translating the trade order into commands necessary to simulate
18 trading from a broker's order screen;
- 19 3. sending the commands to the broker's website; and
- 20 4. continuously monitoring, displaying and updating the status of the
21 trade order.

- 1 50. The method of claim 49 wherein the display and update of the trading
2 information comprises:
 - 3 a. requesting a securities trading data item from one or more servers;
 - 4 b. receiving the securities trading data item from one or more servers;
 - 5 c. comparing the received data item with archived data for that item;
 - 6 d. if the received data item matches the archived data, discarding the data
7 item; and
 - 8 e. if the received data item does not match the archived data, archiving the
9 data, displaying the data and flagging the data as new on the graphical user
10 interface display.

- 1 51. Computer executable software code stored on a computer readable medium,
2 the code for a computer implemented method for trading securities over the
3 Internet, comprising code for allowing a user using a computer with a display
4 having a graphical user interface with multiple windows to place securities
5 orders over the Internet while simultaneously displaying and continuously
6 updating securities trading information on the same display.

- 1 52. A computer-readable medium having computer-executable software code
2 stored thereon, the code for a computer implemented method for electronically

3 trading securities over the Internet comprising code for allowing a user using a
4 computer with a display having a graphical user interface with multiple windows
5 to place securities orders over the Internet while displaying and continuously
6 updating securities trading information on the same display, wherein the
7 securities trading information comprises security position, balance, trade
8 execution status and news related to securities trading, the securities trading
9 information displayed comprises continuously extracting and updating the
10 securities trading information from Internet websites.

- 1 53. A computer-readable medium having computer-executable software code
2 stored thereon, the code for a computer implemented method for electronically
3 trading securities over the Internet comprising:
- 4 a. code for consolidating trading information into a windows based display with
5 multiple windows, the trading information comprising position, balance,
6 trade order, trade order status and trade related news and research, the
7 trading information being extracted from data obtained by searching Internet
8 websites and pages;
 - 9 b. code for allowing the user to simultaneously place trade orders for securities
10 over the Internet while the trading information is displayed and continuously
11 updated by searching Internet websites and pages; and
 - 12 c. wherein the placing of securities orders by the user comprises code for:
 - 13 i. entering the trade order by selecting a stock to be traded and sending a
14 trade order to a broker's Internet website comprising:
 - 15 1. establishing and maintaining communication with the broker's
16 website;

- 17 2. transmitting the trade order into commands necessary to simulate
18 trading from a broker's order screen;
19 3. sending the commands to the broker's website; and
20 4. continuously monitoring, displaying and updating the status of the
21 trade order.

1 54. A computer readable medium according to claim 53 wherein the display and
2 update of the trading information comprises:

- 3 a. code for requesting a securities trading data item from one or more servers;
4 b. code for receiving the securities trading data item from one or more servers;
5 c. code for comparing the received data item with archived data for that item;
6 d. code for determining if the received data item matches the archived data,
7 discarding the data item; and
8 e. code for determining if the received data item does not match the archived
9 data, archiving the data, displaying the data and flagging the data as new
10 on the graphical user interface display.

1 55. A computer system for electronically trading securities comprising:

- 2 a. at least one client computer-based machine;
3 b. a securities trading component running on at least one of the client
4 computer-based machines for allowing a user using a graphical user
5 interface display with multiple windows to place securities orders by sending
6 the securities orders via a communication means to a broker component
7 running on at least at least one server computer-based machine; and
8 c. wherein the securities trading component displays and continuously
9 updates securities trading information collocated on the display by sending

10 requests and receiving data via the communication means from at least one
11 server computer-based machine.

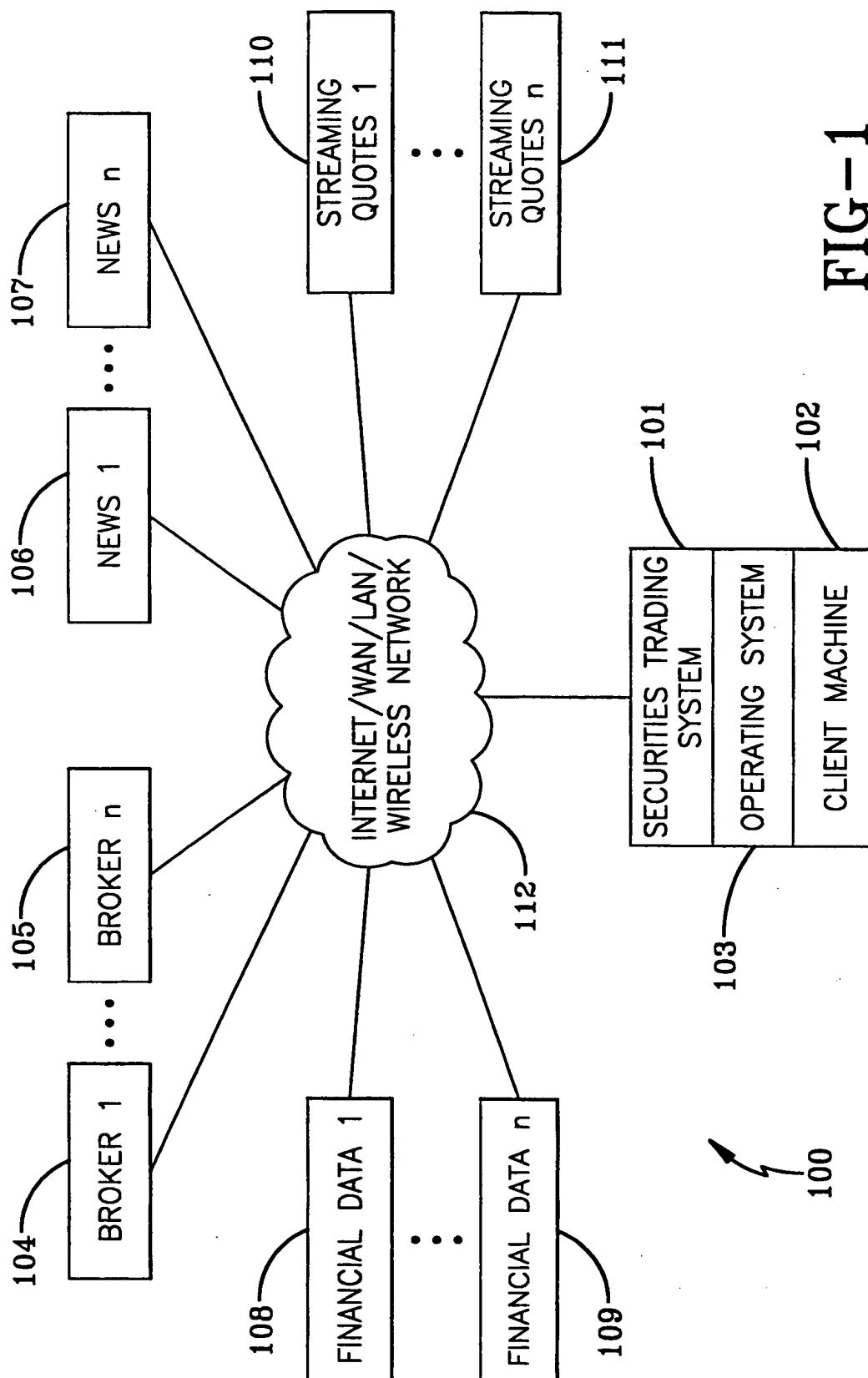
1 56. The computer system of claim 55 wherein the communication means
2 comprises an Internet connection.

1 57. The computer system of claim 55 wherein the communication means is
2 selected from the group consisting of a wide area network, local area network
3 and wireless network.

1 58. The method of claim 26 wherein the trade execution status comprises:

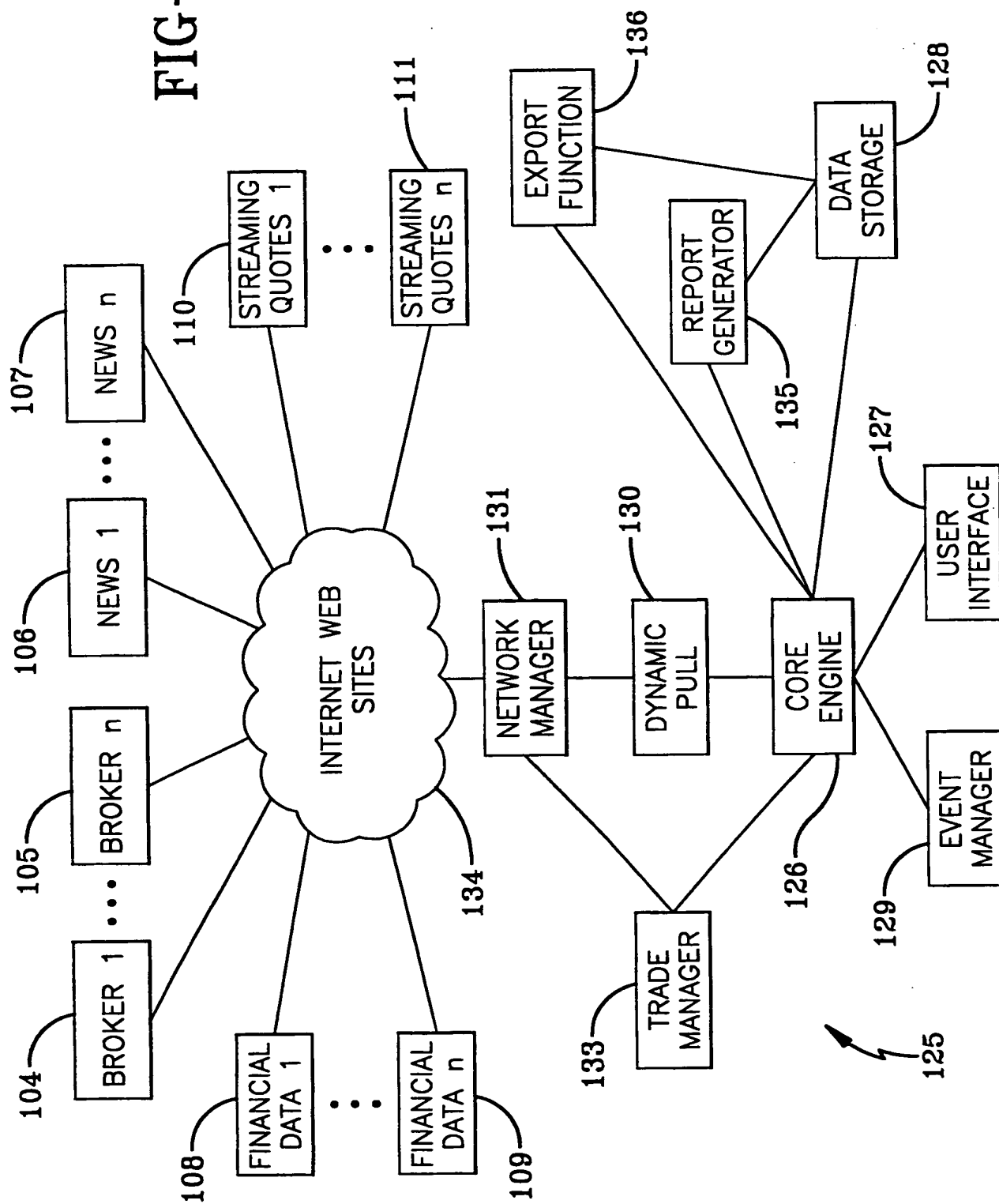
- 2 a. determining if a trade order has been executed and if so, notifying the user;
- 3 b. if a trade order has not been executed, retrying the trade order a specified
4 number of times;
- 5 c. if the trade order has been retried the specified number of times,
6 determining if the stock is held by a different broker and determining if the
7 user wants to sell the stock from the different broker;
- 8 d. if the user does not want to sell the stock from the different broker, sending
9 notification to the user that the trade has not been executed; and
- 10 e. if the user wants to sell the stock from a different broker, sending the trade
11 order to the different broker and repeating steps a through c.

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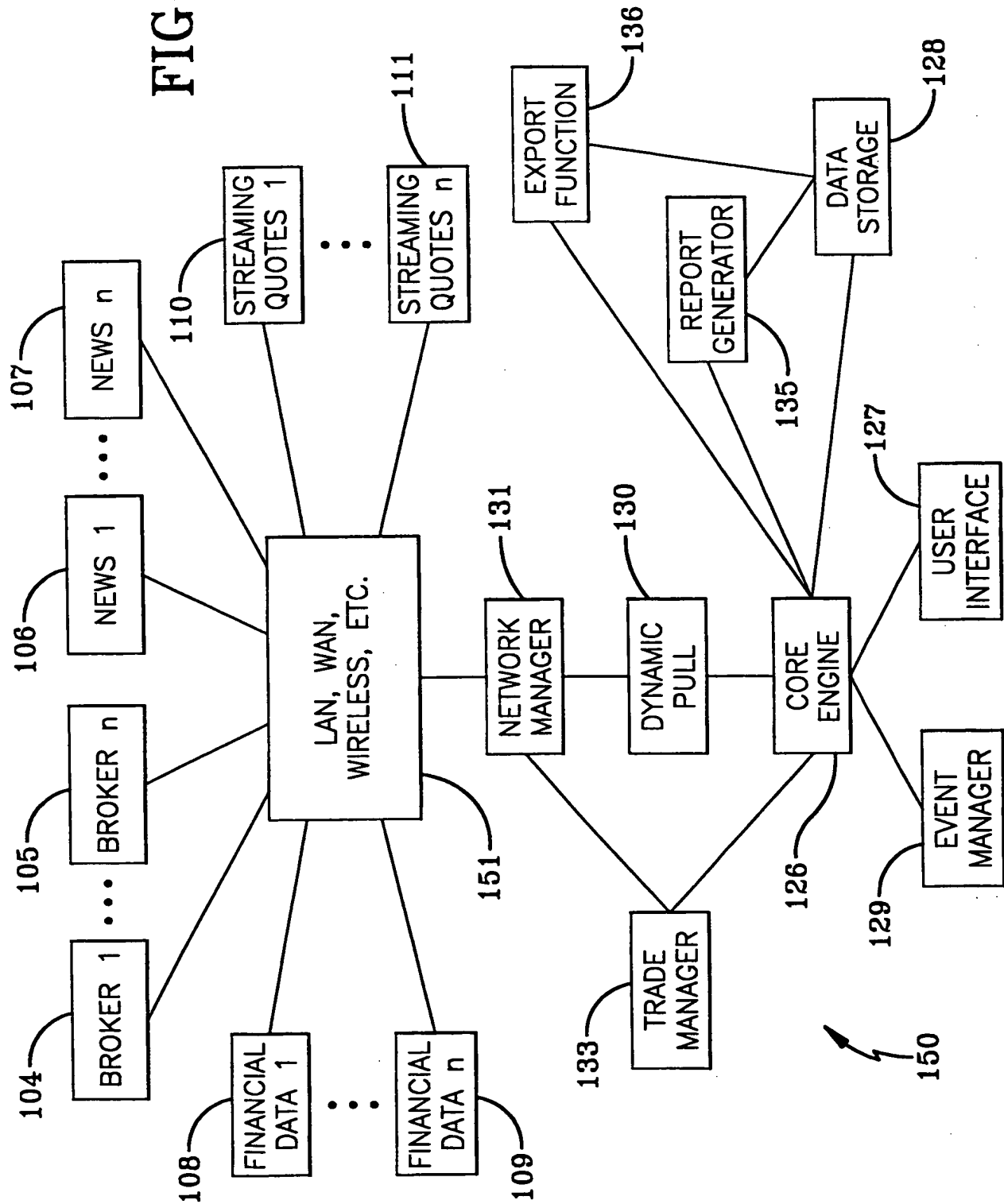
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FIG-2



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FIG-3



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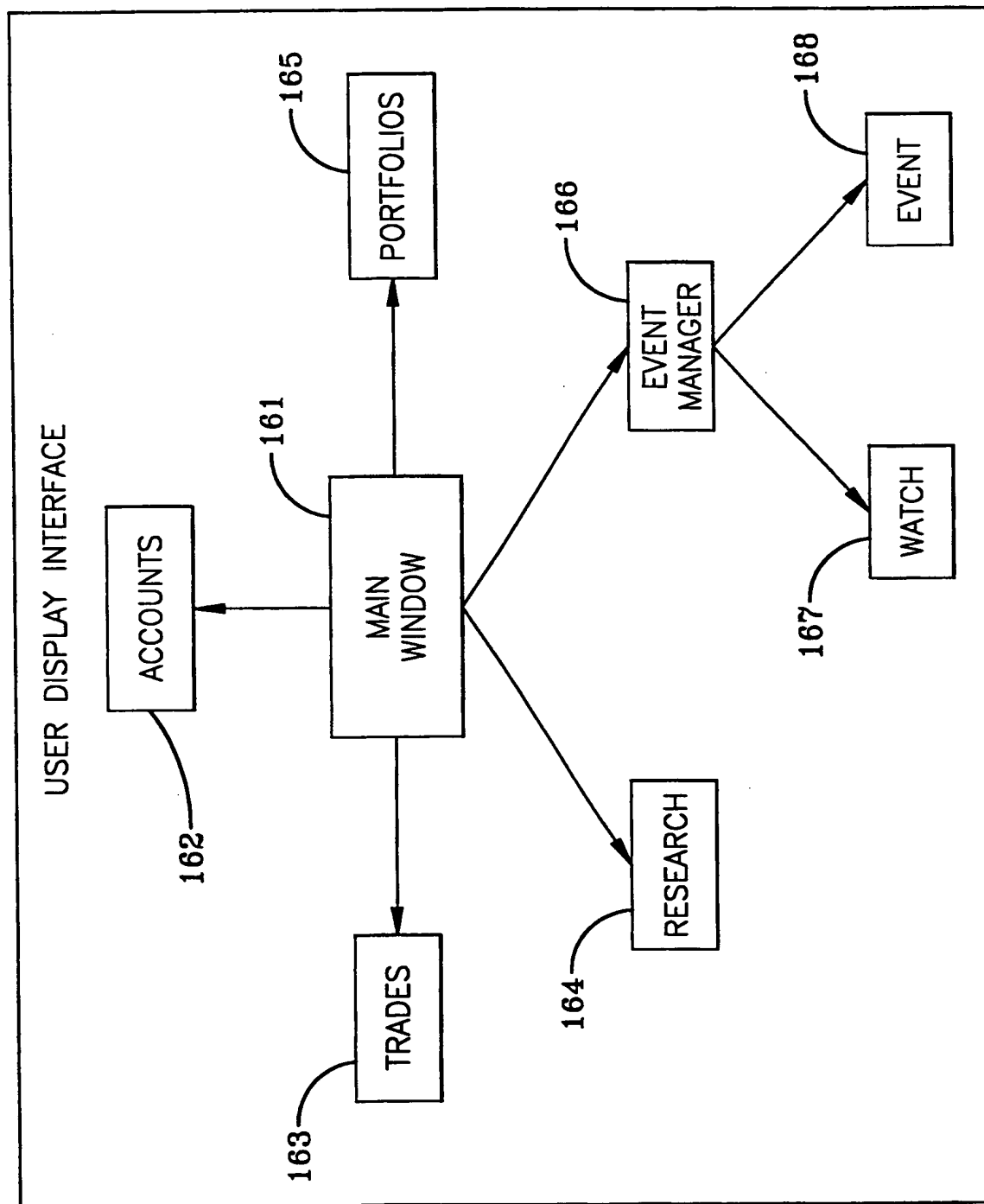


FIG-4

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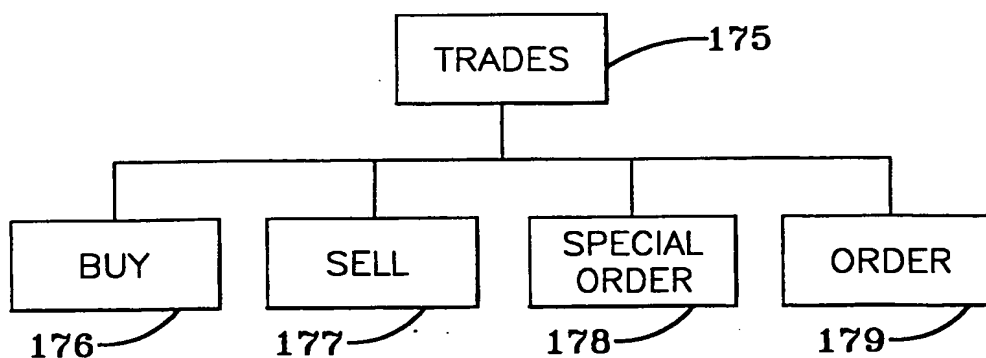


FIG-5

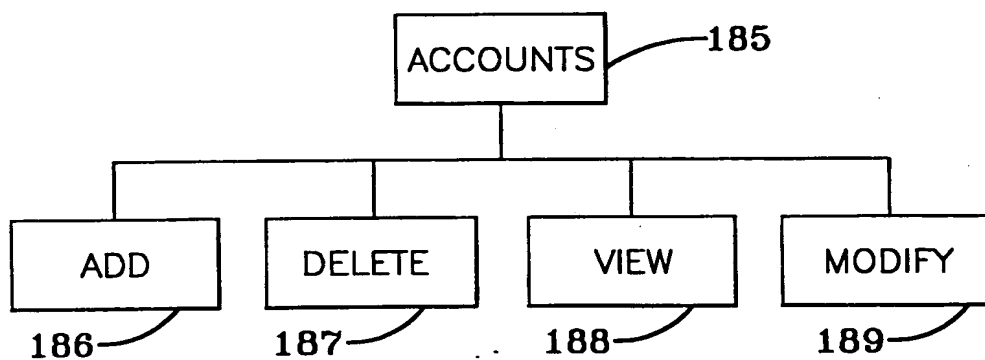


FIG-6

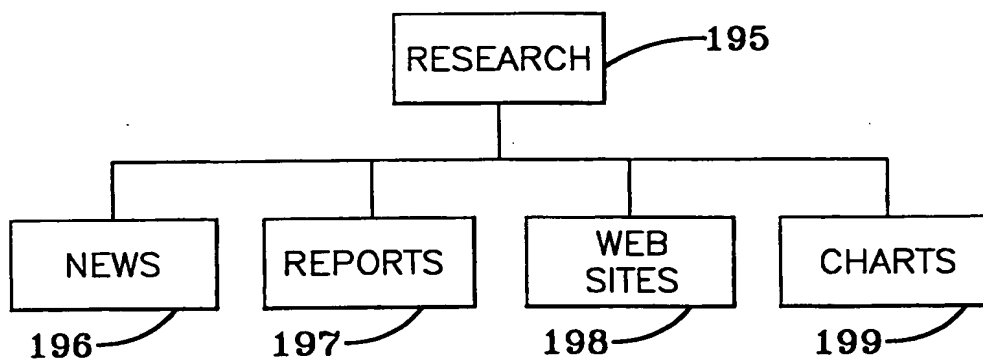
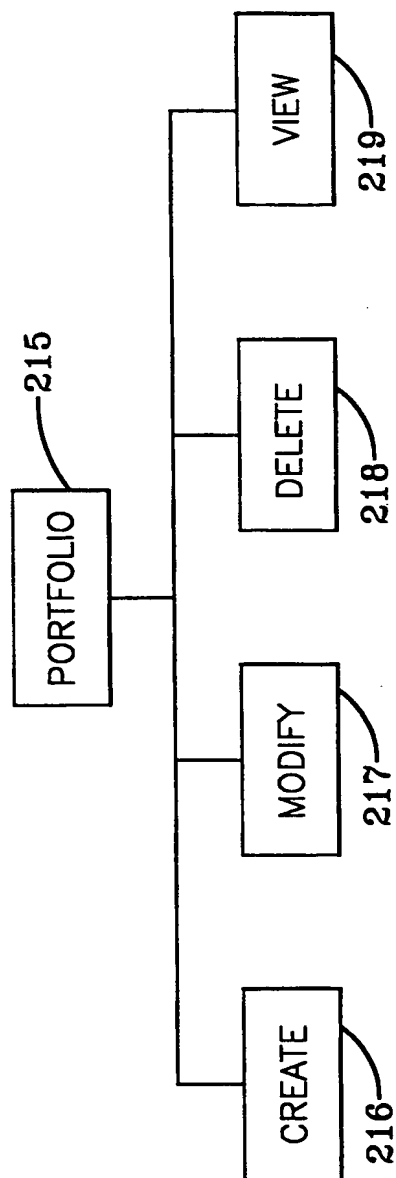
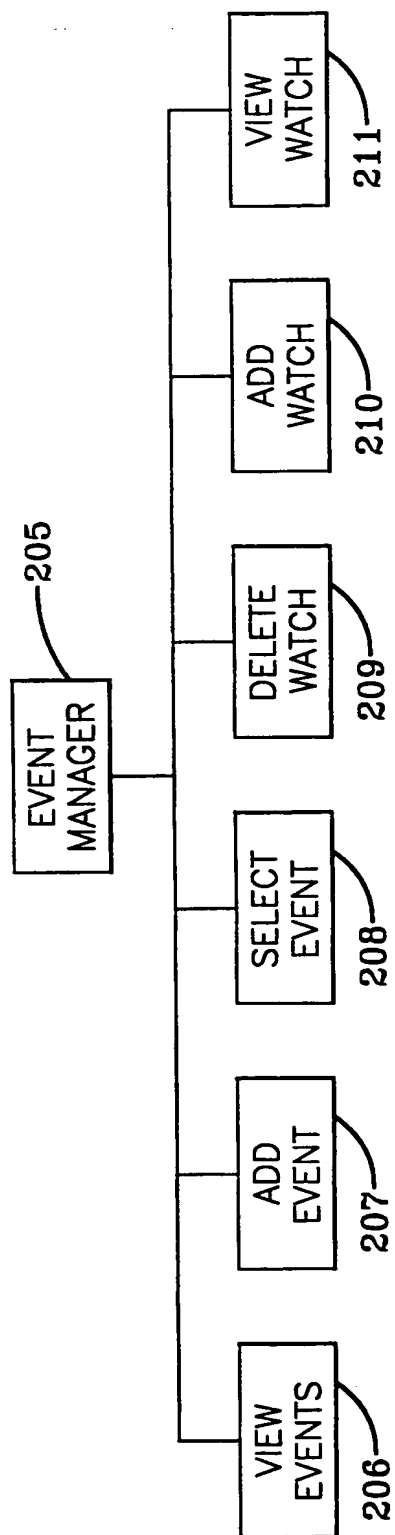


FIG-7

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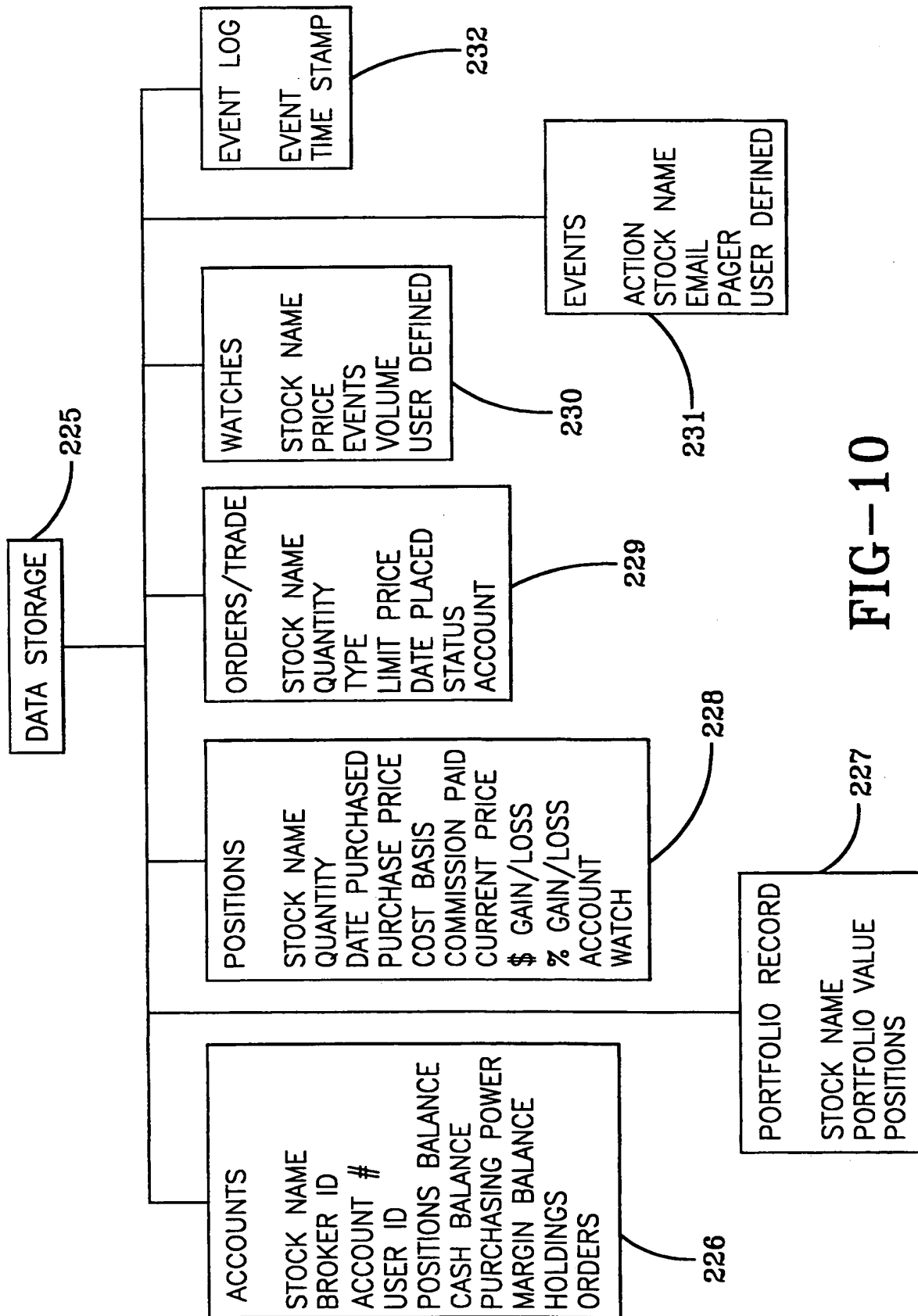


FIG-10

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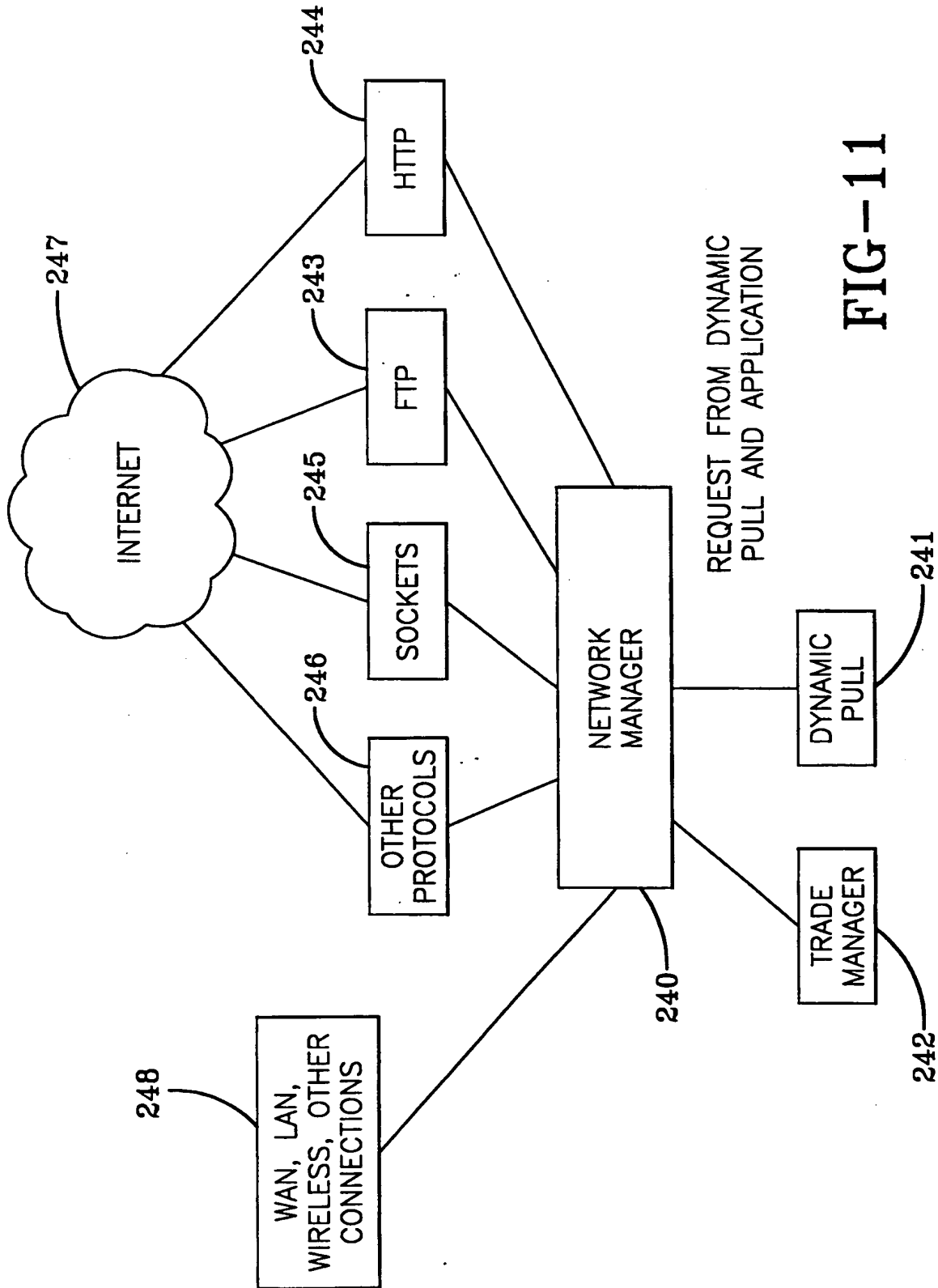


FIG-11

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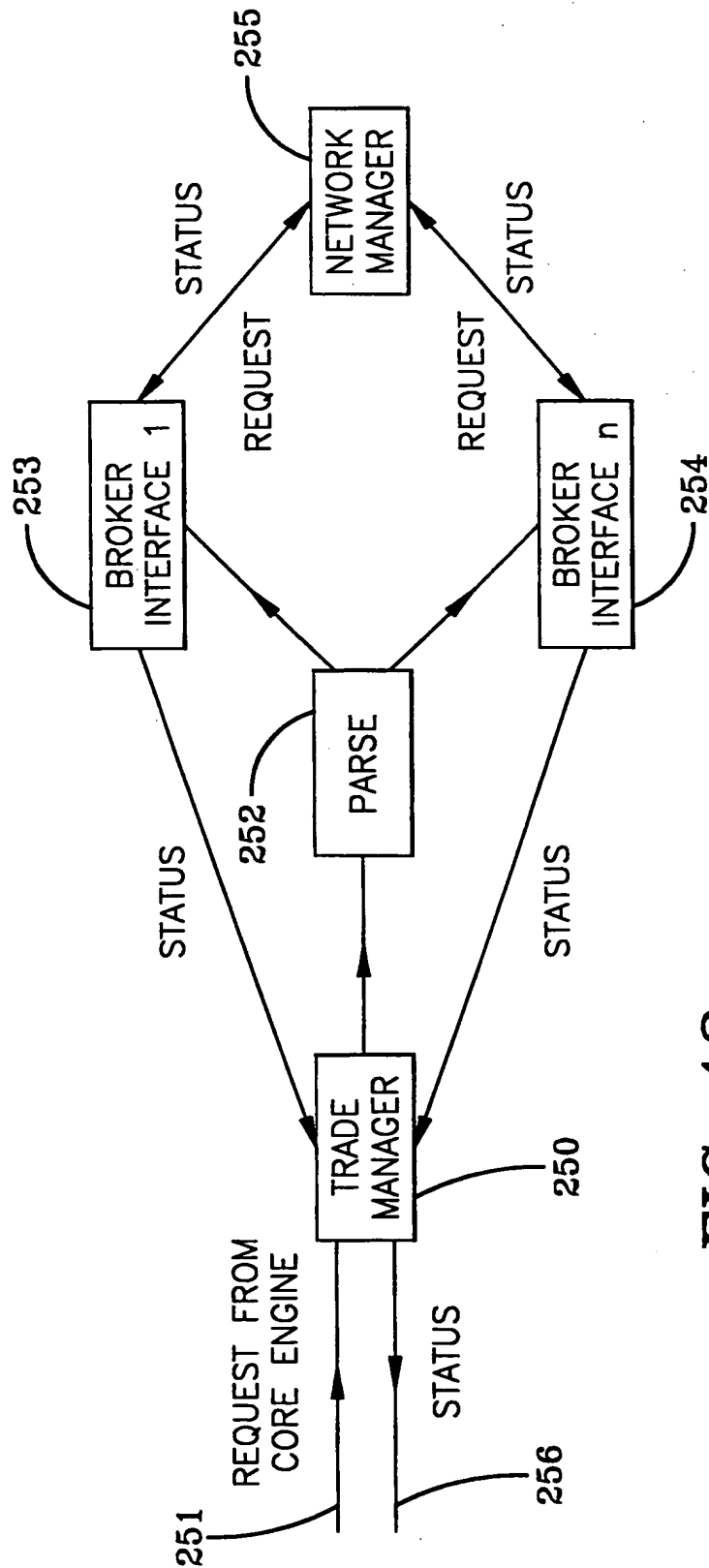


FIG-12

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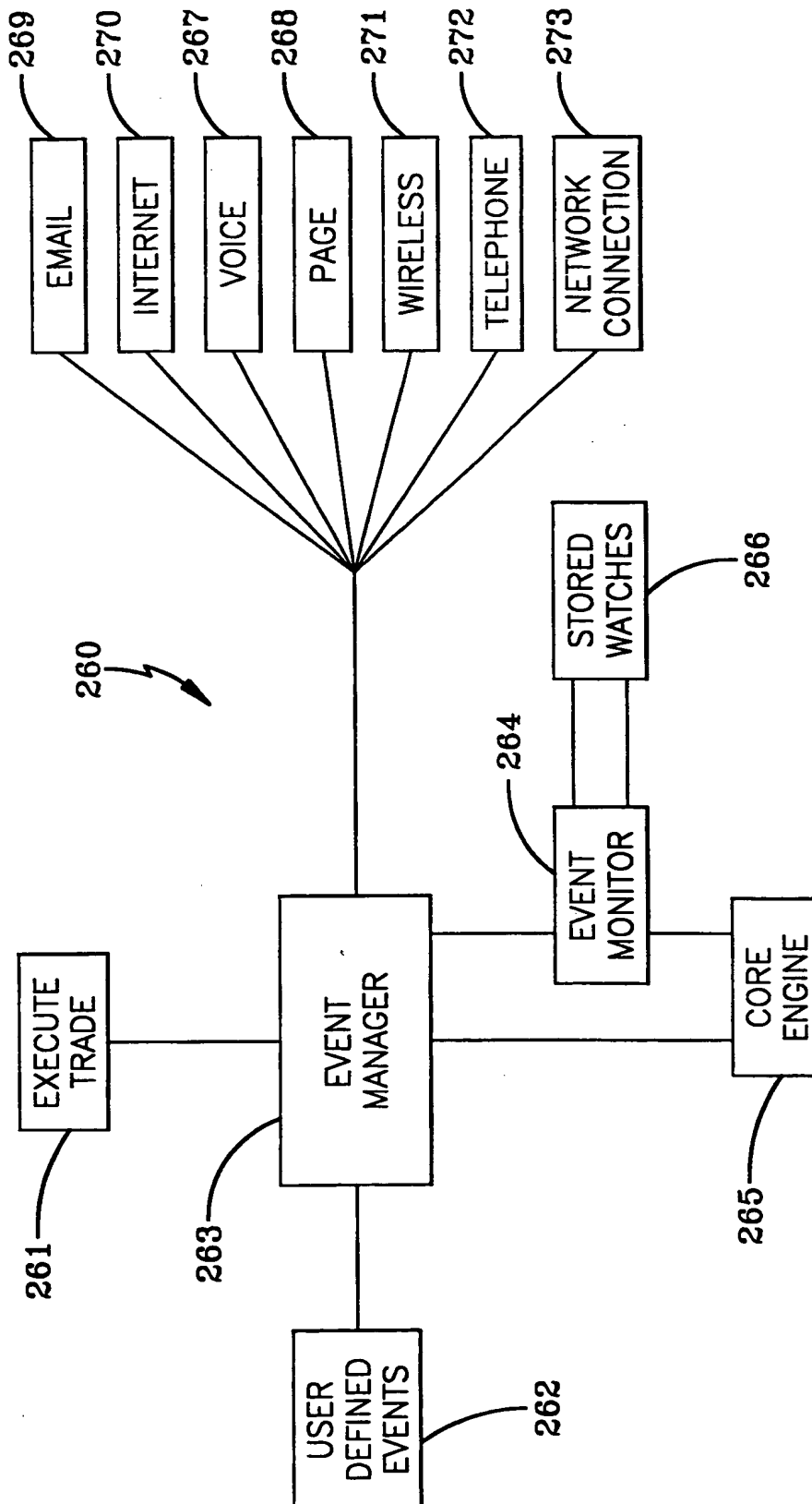


FIG-13

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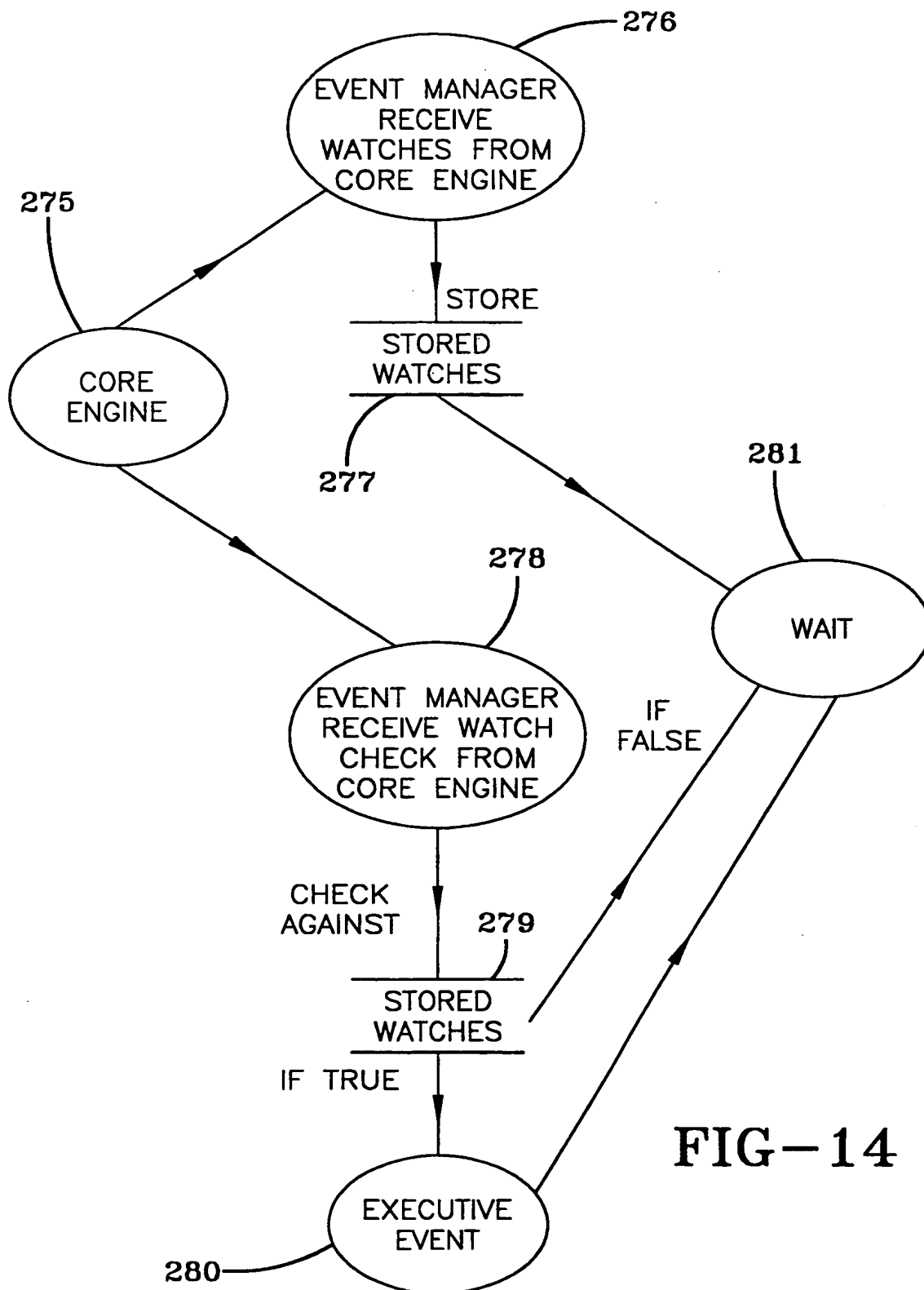
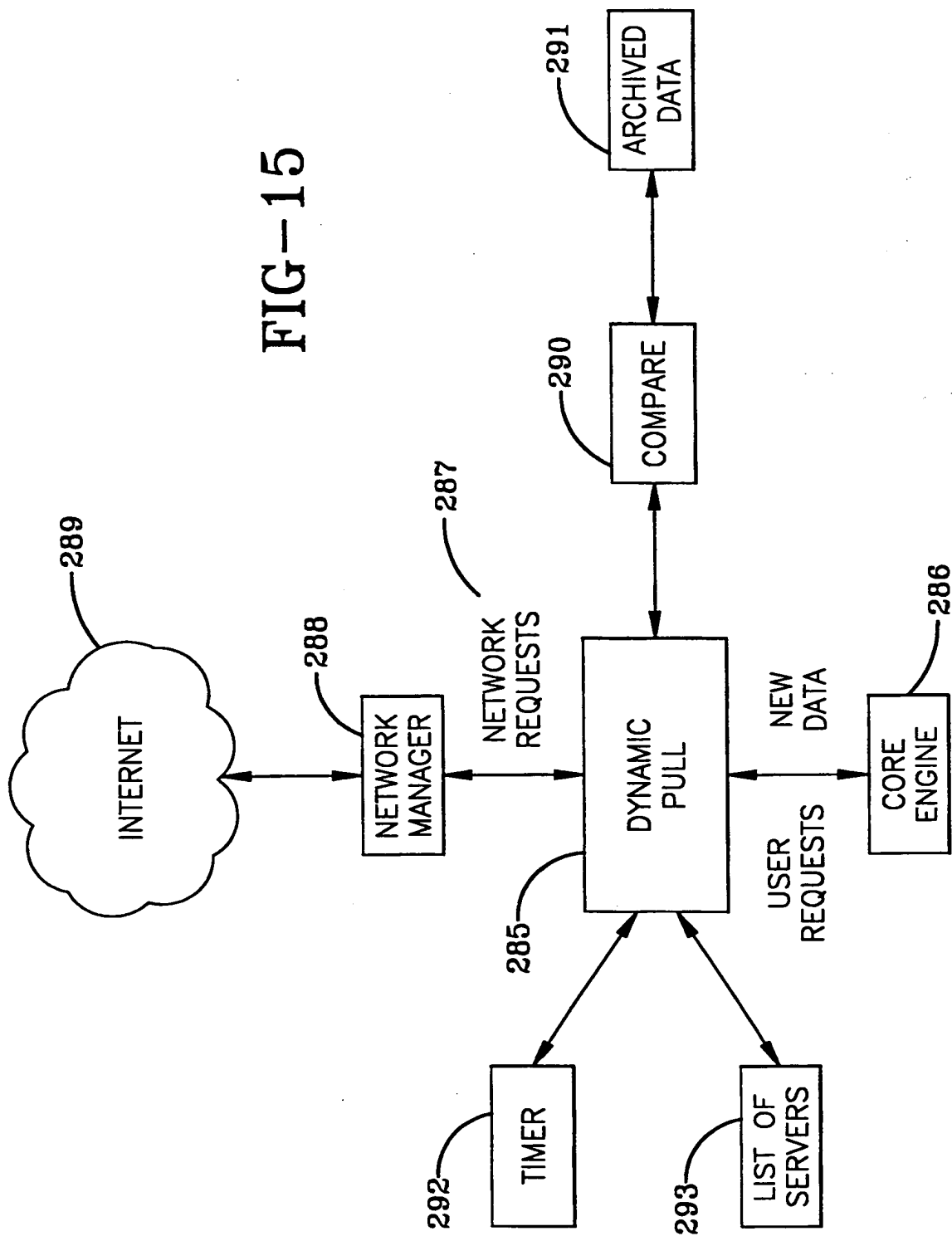


FIG-14

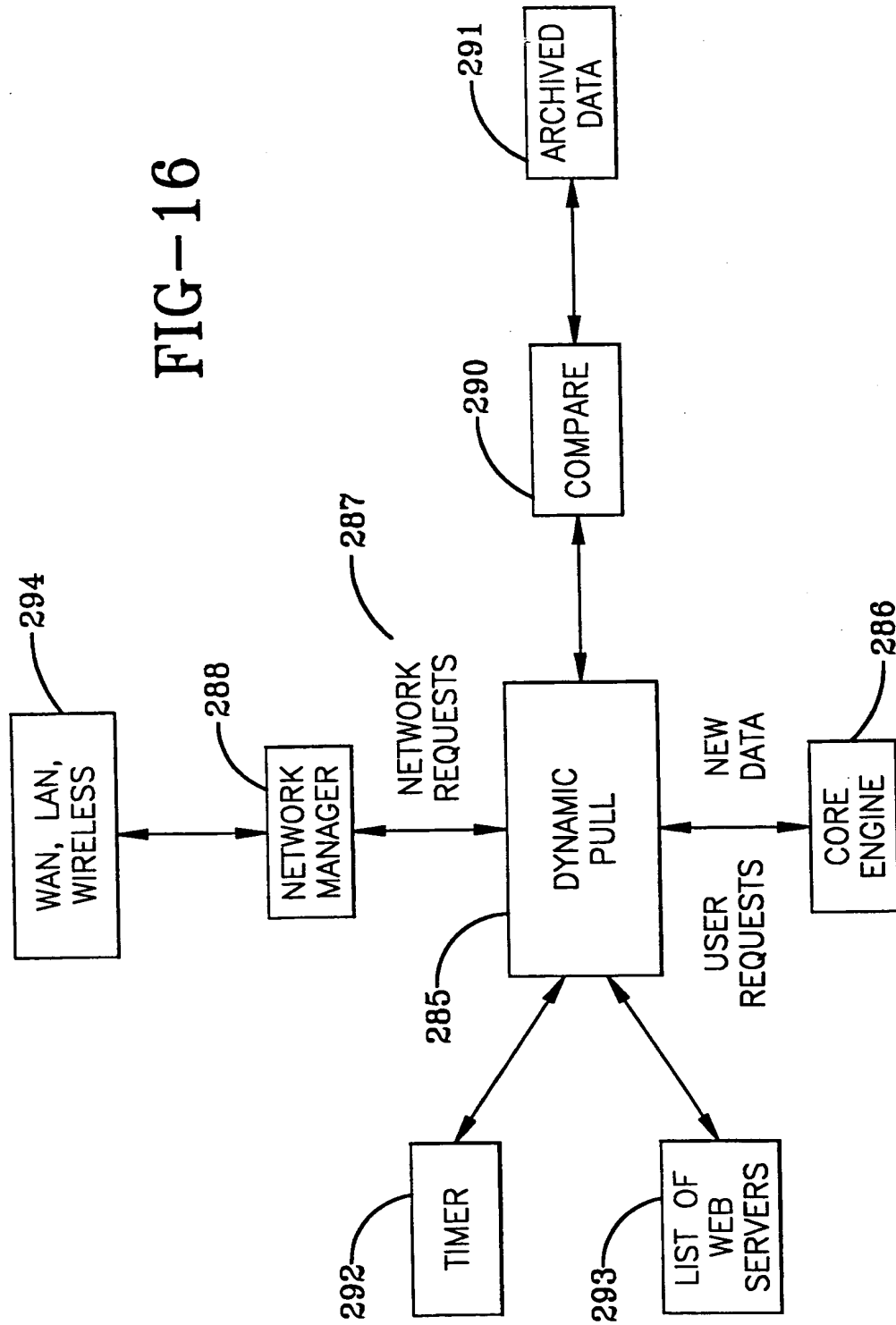
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FIG-15



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FIG-16



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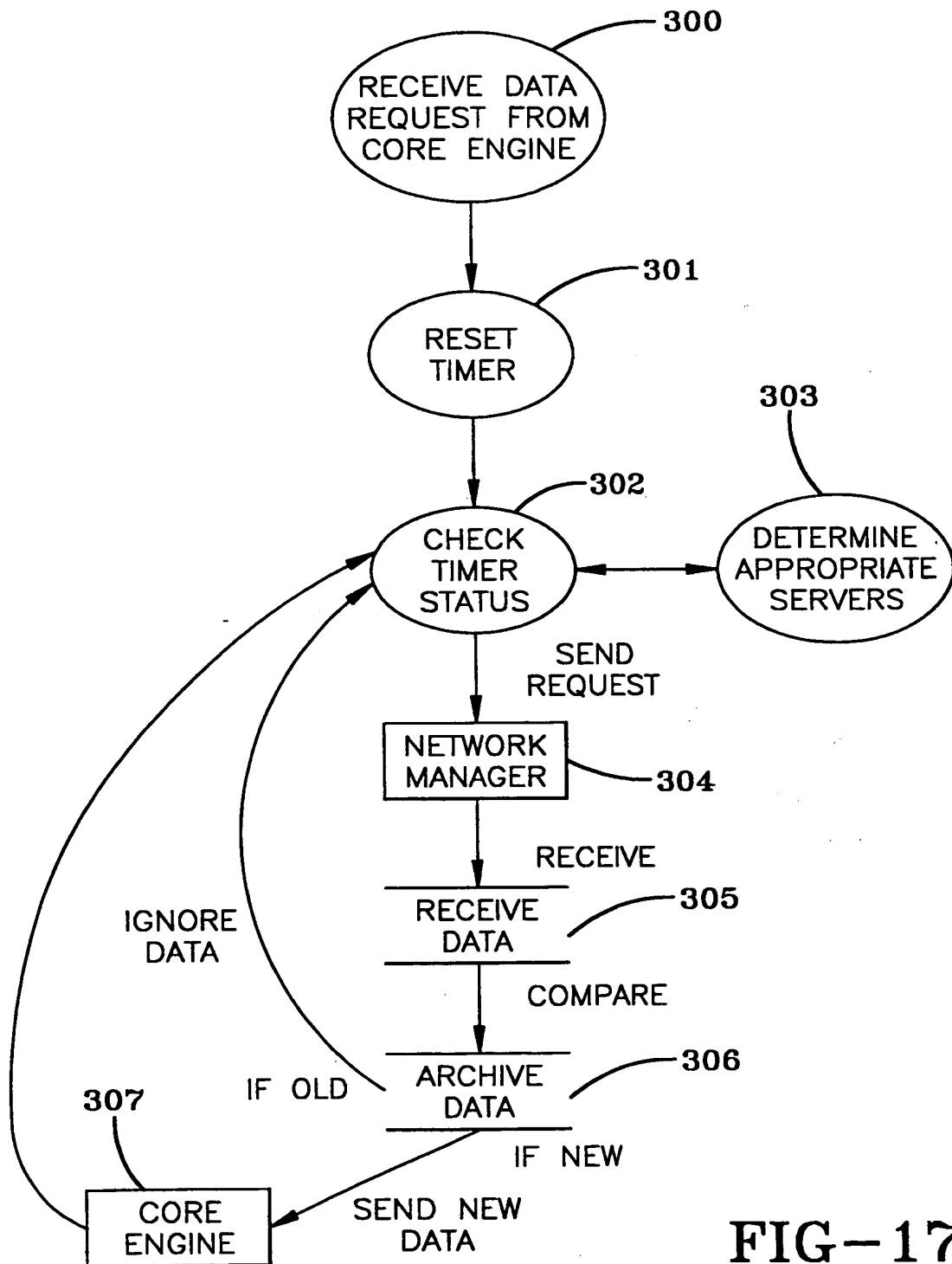


FIG-17

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Balances				Order Ticket																																																																																																		
Trade		View		Configure		Report																																																																																																
<div> <div>Assets</div> <div> Long Market Value 281,112.13 Money Market Funds 0.00 Credit Balances 0.00 Total Assets 281,112.13 </div> </div>				<div> <div>Assets</div> <div> Transaction Buy Symbol Quantity Order Type Market Limit Price Good Till Canceled <input type="checkbox"/> </div> </div>																																																																																																		
<div> <div>Equity</div> <div> Connection Status Checking Refresh </div> </div>				<div> <div>Margin</div> <div> Due ing Power News </div> </div>																																																																																																		
<div> <div>Positions</div> <table border="1"> <thead> <tr> <th>Refresh</th> <th>Save</th> <th>Add</th> <th>Edit</th> <th>Delete</th> </tr> </thead> <tbody> <tr> <td>Symbol</td> <td>Shares</td> <td>Bought at</td> <td>Cost</td> <td>B</td> </tr> <tr> <td>CLST</td> <td>1000</td> <td>7</td> <td>7,000</td> <td>11</td> </tr> <tr> <td>\$INDU</td> <td></td> <td></td> <td>0.00</td> <td>N/</td> </tr> <tr> <td>\$COMPQ</td> <td>100</td> <td></td> <td>-100.00</td> <td>N/</td> </tr> <tr> <td>DELL</td> <td></td> <td></td> <td>0.00</td> <td>37.</td> </tr> <tr> <td>TSCN</td> <td>1000</td> <td>12.25</td> <td>12,250.00</td> <td>11.</td> </tr> </tbody> </table> </div>				Refresh	Save	Add	Edit	Delete	Symbol	Shares	Bought at	Cost	B	CLST	1000	7	7,000	11	\$INDU			0.00	N/	\$COMPQ	100		-100.00	N/	DELL			0.00	37.	TSCN	1000	12.25	12,250.00	11.	<div> <div>Headlines</div> <table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Symbol</th> <th>Headlines</th> <th>Source</th> </tr> </thead> <tbody> <tr> <td>4/7/99</td> <td>6:27pm</td> <td>DJIA</td> <td>Bond Report:Prices</td> <td>CBS MarketWatch</td> </tr> <tr> <td>4/7/99</td> <td>5:48pm</td> <td>DJIA</td> <td>World Markets:Europ</td> <td>CBS MarketWatch</td> </tr> <tr> <td>4/7/99</td> <td>5:33pm</td> <td>DJIA</td> <td>Dow, S&P rally to rec</td> <td>Reuters Securities</td> </tr> <tr> <td>4/7/99</td> <td>4:13pm</td> <td>DJIA</td> <td>Dow rallies to record</td> <td>Reuters Securities</td> </tr> <tr> <td>4/7/99</td> <td>5:48pm</td> <td>NASD</td> <td>World Markets:Europ</td> <td>CBS MarketWatch</td> </tr> <tr> <td>4/7/99</td> <td>4:13pm</td> <td>NASD</td> <td>Dow rallies to record</td> <td>Reuters Securities</td> </tr> <tr> <td>4/7/99</td> <td>2:42pm</td> <td>NASD</td> <td>Dow in record terror</td> <td>Reuters Securities</td> </tr> <tr> <td>4/7/99</td> <td>5:21pm</td> <td>SCH</td> <td>Paul Ferrell's first-qu</td> <td>CBS MarketWatch</td> </tr> <tr> <td>4/7/99</td> <td>2:36pm</td> <td>SCH</td> <td>U.S. bank, broker sto</td> <td>Reuters Securities</td> </tr> <tr> <td>4/7/99</td> <td>12:33pm</td> <td>SCH</td> <td>CORRECTED-U.S. st</td> <td>Reuters Securities</td> </tr> <tr> <td>4/7/99</td> <td>9:05am</td> <td>INTL</td> <td>HYMCO Technologie</td> <td>Business Wire</td> </tr> </tbody> </table> </div>				Date	Time	Symbol	Headlines	Source	4/7/99	6:27pm	DJIA	Bond Report:Prices	CBS MarketWatch	4/7/99	5:48pm	DJIA	World Markets:Europ	CBS MarketWatch	4/7/99	5:33pm	DJIA	Dow, S&P rally to rec	Reuters Securities	4/7/99	4:13pm	DJIA	Dow rallies to record	Reuters Securities	4/7/99	5:48pm	NASD	World Markets:Europ	CBS MarketWatch	4/7/99	4:13pm	NASD	Dow rallies to record	Reuters Securities	4/7/99	2:42pm	NASD	Dow in record terror	Reuters Securities	4/7/99	5:21pm	SCH	Paul Ferrell's first-qu	CBS MarketWatch	4/7/99	2:36pm	SCH	U.S. bank, broker sto	Reuters Securities	4/7/99	12:33pm	SCH	CORRECTED-U.S. st	Reuters Securities	4/7/99	9:05am	INTL	HYMCO Technologie	Business Wire
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\$INDU			0.00	N/																																																																																																		
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4/7/99	12:33pm	SCH	CORRECTED-U.S. st	Reuters Securities																																																																																																		
4/7/99	9:05am	INTL	HYMCO Technologie	Business Wire																																																																																																		

FIG-18

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FIG-19

Balances										327										328										329									
Trade					View					Configure					Report					Update Positions					320														
321										Assets										Liabilities										323									
Long Market Value										281,112.13										Short Market Value										0.00									
Money Market Funds										0.00										Debit Balance										0.00									
Credit Balances										0.00										Total Liabilities										\$0.00									
Total Assets										281,112.13										Margin Information										324									
Equity										0.00										Funds Due										0.00									
Option Value										0.00										Buying Power										281,112.13									
Net Equity										\$0.00										Available Funds										\$0.00									

Connection Status										322									
Checking										326									

Positions										325											
Refresh		Save		Add		Edit		Delete		Trade											
Symbol	Shares	Bought at	Cost	Bid	Ask	Last Trade	Change	Value	Gain/Loss	Time											
CLST	1000	7	7,000	11.125	11.8125	11.125	0.5625	11,125.00	4,125.00	11											
\$INDU			0.00	N/A	N/A	9908.82	5.27	0.00	0.00												
\$COMPQ	100		-100.00	N/A	N/A	2411.88	-9.39	241,188.00	241,288.00	F											
DELL			0.00	37.8125	37.875	37.8125	-2.4375	0.00	0.00	11											
TSCN	1000	12.25	12,250.00	11.8125	11.875	11.9375	0.5625	11,812.50	-437.50	11											
											△										

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Balances - Total			
Trade	View	Configure	Report
Assets		Liabilities	
Long Market Value--Broker 1	\$ 112,323.25	Short Market Value--Broker 1	\$ -
Long Market Value--Broker 2	\$ 323,000.00	Short Market Value	\$ -
Money Market Funds--Broker 1	\$ -	Debit Balances--Broker 1	\$ -
Money Market Funds--Broker 2	\$ -	Debit Balances--Broker 1	\$ -
Credit Balances--Broker 1	\$ -		
Credit Balances--Broker 2	\$ -		
Total Assets	\$ 435,323.25	Total Liabilities	\$ -
Equity		Margin Information	
Equity--Broker 1	\$ -	Fund Due--Broker 1	\$ -
Equity--Broker 2	\$ -	Fund Due--Broker 2	\$ -
Option Value--Broker 1	\$ -	Buying Power--Broker 1	\$ 112,323.25
Option Value--Broker 2	\$ -	Buying Power--Broker 2	\$ 323,000.00
Net Equity	\$ -	Available Funds	\$ 435,323.25

FIG-20

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Balances - Broker 1				
Trade	View	Configure	Report	Update Positions
<div> <div>Assets</div> <div> Long Market Value \$ 323,000.00 Money Market Funds - Credit Balances - </div> </div>				
<div> <div>Liabilities</div> <div> Short Market Value \$ - Debit Balance \$ - </div> </div>				
Balances - Broker 2				
Total Assets				
Equity				
Option Value				
Net Equity				
Trade	View	Configure	Report	Update Positions
<div> <div>Assets</div> <div> Long Market Value \$ 112,323.25 Money Market Funds 0.00 Credit Balances 0.00 Total Assets \$112,323.25 </div> </div>				
<div> <div>Liabilities</div> <div> Short Market Value 0.00 Debit Balance 0.00 Total Liabilities \$0.00 </div> </div>				
<div> <div>Equity</div> <div> Equity 0.00 Option Value 0.00 Net Equity \$0.00 </div> </div>				
<div> <div>Margin Information</div> <div> Funds Due 0.00 Buying Power 112,323.25 Available Funds \$112,323.25 </div> </div>				

FIG-21

341	342	343	344	345	346	347	348	349	350	351	340
Positions											
Refresh	Save	Add	Edit	Delete	Trade						
Symbol	Shares	Bought at	Cost	Bid	Ask	Last Trade	Change	Value	Gain/Loss	Time	Δ
CLST	1000	7	7,000	11.125	11.1875	11.125	0.5625	11,125.00	4,125.00	11	
\$INDU			0.00	N/A	N/A	9908.82	5.27	0.00	0.00		
\$COMPQ	100		-100.00	N/A	N/A	2411.88	-9.39	241,188.00	241,288.00	FC	
DELL			0.00	37.8125	37.875	37.8125	-2.4375	0.00	0.00	11	
TSCN	Buy	12.25	12,250.00	11.8125	11.875	11.9375	0.5625	11,812.50	-437.50	11	
SVSP	Sell		0.00	N/A	N/A	23.34	-0.31	0.00	0.00		
MFOO	News	16.36	16,360.00	N/A	N/A	16.87	-0.27	16,870.00	510.00		
CELL	Details		0.00	6.65625	6.6875	6.65625	0.375	0.00	0.00	11	
INTC	Report		0.00	116.625	116.6875	116.625	-2.375	116.63	116.63	11	▽
Website>	Website 1										
Chart	Website 2										
	Website n										

FIG-22

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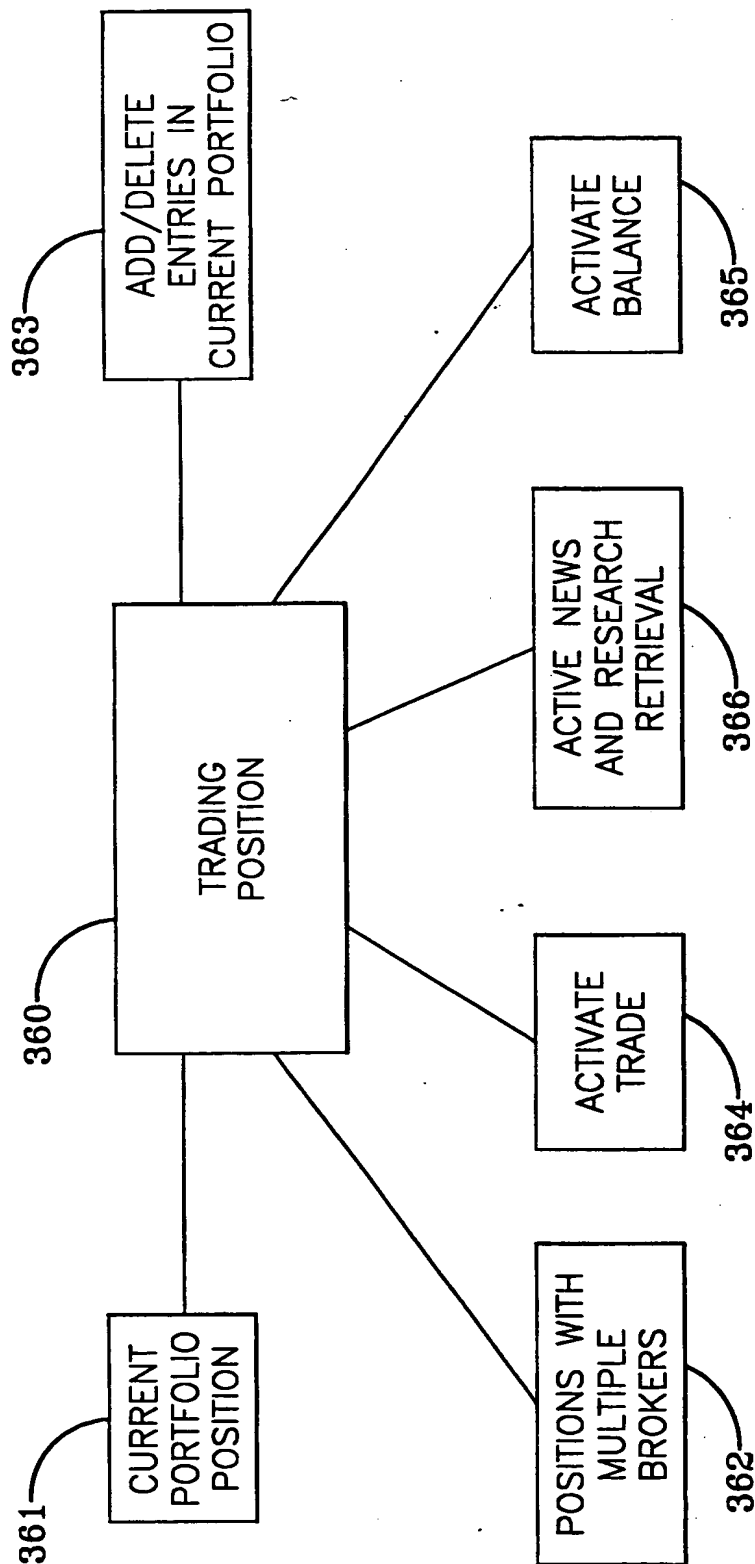


FIG-23

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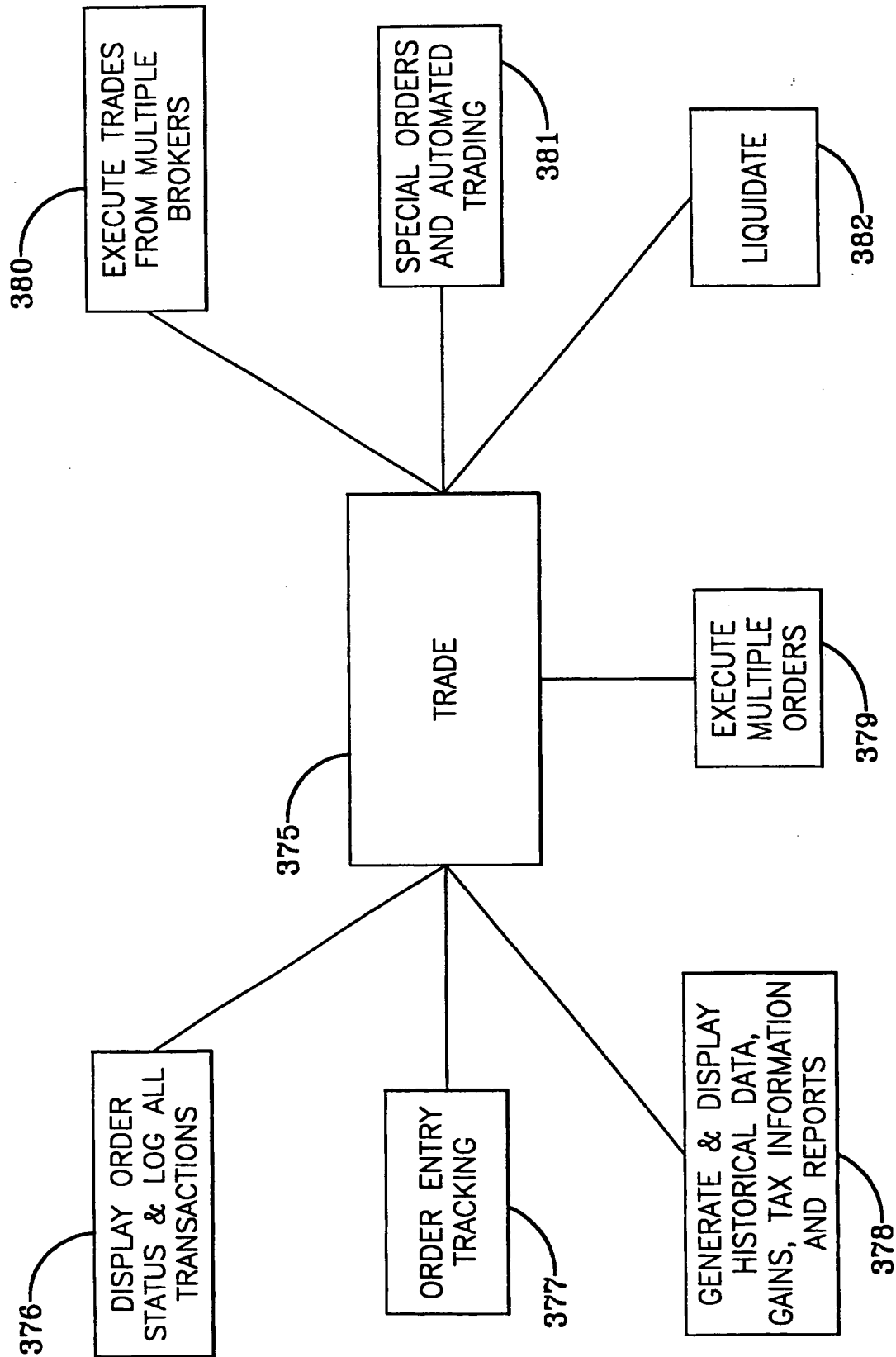


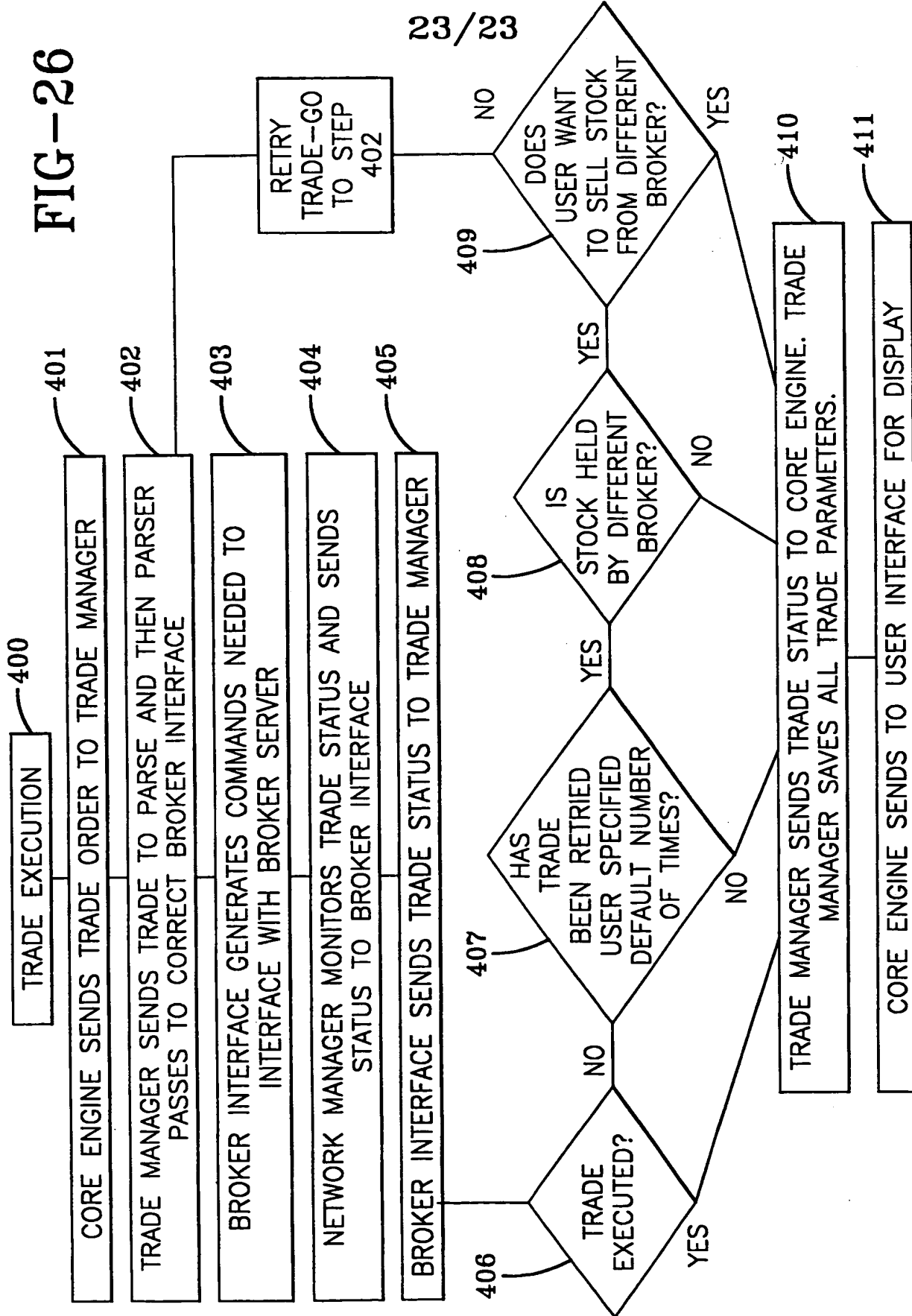
FIG-24

Order	Symbol	Shares	Buy/Sell	Price	Last Trade	Limit/Stop	GTC/Day	Status
001200	DELL	10	Buy	40.4375	40.4375	Market	Day	Filled
001200	MSFT	5	Buy	90.125	90.125	Limit	Day	Canceled
001200	IBM	5	Buy	35	180	Limit	Day	Pending

Transaction	Buy
Symbol	
Quantity	
Order Type	Market
Limit Price	
Good Till Canceled	<input type="checkbox"/>
Account	Paper

Connection Status	Refresh
Checking	Buy Cancel

FIG-26



INTERNATIONAL SEARCH REPORT

 International Application No.
 PCT/US88/10931

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/60

US CL : 705/37

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/37

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST, DIALOG, EPO, JPO, IBM Technical Database

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,674,044 A (KALMUS ET AL) 16 June 1987; Title, Abstract, col 2, lines 1-8, 38-46, Fig. 1, col 3, lines 61-68, col 4, lines 1-68 (specifically line 50), col 5, lines 1-45, Figs. 3 & 4 and claim 1.	1-58
Y	SCHWABLINKWEB. Trading Push, Schwab's latest Web application pushes real-time (Fryer, Bronwyn) Information Week, v677, p 97(3), April 13, 1998. The whole article.	1-58

☐ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

06 JULY 2000

Date of mailing of the international search report

18 AUG 2000

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 Washington, D.C. 20231

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Authorized officer

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Telephone No. (703) 305-9708

Form PCT/ISA/210 (second sheet) (July 1998)*